

PARKER RIVER NATIONAL WILDLIFE REFUGE

Newburyport, Massachusetts

NARRATIVE REPORT

Jan. - Dec. 1971

C.O.  
(RF)

United States Department of the Interior  
Bureau of Sport Fisheries and Wildlife

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REFUGE PERSONNEL

Edward S. Moses  
William R. Forward  
Thomas J. Stubbs  
Raoul J. De Serres  
Donald G. Grover  
Irvine H. Walker, Jr.  
Catherine A. Welch

Refuge Manager  
Wildlife (Management) Biologist  
Foreman III  
Maintenance man  
Maintenance man  
Maintenance man  
Clerk

TEMPORARY PERSONNEL

		<u>Entered on</u> <u>Duty</u>	<u>Terminated</u>
John W. Langan	Laborer	4/12/71	8/23/71
Stephen P. Doty	Student Aid	5/25/71	9/9/71
Floyd A. Maker Jr.	Student Aid	5/29/71	8/13/71
Richard B. Pier	Student Aid	6/7/71	7/7/71
William Hickey	Lifeguard	5/27/71	9/6/71
Dorothy Kuziora	Lifeguard	5/31/71	8/21/71
Daniel O'Brien	Lifeguard	5/29/71	9/6/71
Janel Lowell	Lifeguard	6/5/71	9/6/71
David C. Woodruff	Biological Technician	6/14/71	12/1/71
Ward J. Dukelow	Laborer	6/15/71	9/8/71
Robert W. Loveless	Laborer	6/16/71	9/2/71
Sarah A. Lawrence	Laborer	7/1/71	9/10/71
Bryan F. King	Laborer	7/11/71	10/8/71
Grace P. Christy	Wildlife Biologist	6/28/71	Career Conditional

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# NARRATIVE REPORT

## PARKER RIVER NATIONAL WILDLIFE REFUGE

Jan. - Dec. 1971

### I. General

#### A. Weather Conditions:

1971 was similar to the previous year in most categories. January was more severe during the first half of the month (temperature reached -9) but moderated thereafter. February continued the trend although a -6° temperature was noted and 14.5" of snowfall was recorded. March had half the snow compared with the same month in 1970. April was typical and a high of 71° being noted on the 13th. May was a cool and wet month with 4.35" of precipitation received. June was humid with the maximum temperature (97°) for the year being observed. July was also warm with about average precipitation. August had slightly higher than normal precipitation but had many nice beach days in the latter part. September produced less than normal precipitation and continued good beach weather. October was seasonal except for less precipitation than normal. November was wet and mild until the latter portion when temperatures dropped. December gave us some snow (23.75") and was alternately cold then mild over much of the month.

#### Precipitation

	<u>Snowfall</u>	<u>This Month</u>	<u>Average*</u>	<u>Maximum</u>	<u>Minimum</u>
				<u>Temperature</u>	
Jan.	14.75"	1.83	3.42	42	-9
Feb.	14.50	4.58	3.48	50	-6
Mar.	10.25	2.87	3.36	58	20
Apr.	4.00	2.79	3.52	71	29
May		4.35	3.94	85	36
June		2.96	2.72	97	42
July		3.48	3.44	95	49
Aug.		3.10	2.85	93	46
Sept.		2.07	3.16	90	38
Oct.		2.78	3.49	83	38
Nov.	3.00	6.28	4.89	74	20
Dec.	<u>23.75</u>	<u>3.94</u>	<u>4.11</u>	<u>56</u>	<u>4</u>
Total	70.25"	41.03"	42.38"		
Extremes				97	-9

\*Averages 1947 - 1970



The above data was gathered from the weather station located at the Newburyport Pumping Station (5 miles west of headquarters).

B. Habitat Conditions:

1. Water: The refuge fresh water pools opened up by March 28, about the same time as last year. Tidal salt marshes had cleared from one to two weeks earlier. Water levels held in the pools, followed typical seasonal patterns and objectives were met. In 1971 the South Pool was flooded once with salt water for purple loosestrife control following one season (1970) when it was not done. As in 1970, some minor manipulation downward of high spring water levels was necessary in Stage Island Pool to avoid flooding of a marginal roadway. Pool freeze-up took place on Dec. 22.

2. Food and Cover: Pool water levels for the year followed normal seasonal patterns except for the little manipulation undertaken. Despite a retarded growing season due to wet, cool conditions in the spring a typical mixed growth of plant species developed within parts of the pools. Wild millet, smartweed, panicum grass and bulrush were some of the more desirable species which came in. As usual reed grass, purple loosestrife and cattail were dominant in some areas within the pools. The South Pool produced dwarf spikerush on open exposed flats, along with good marginal stands of panicum grass and wild millet in various combinations with purple loosestrife.

Three upland field units (51 acres) bordering the pools and marshes were reseeded to winter rye in late August and early September. The plantings, particularly in the North Pool field, were retarded some by feeding activities of our local Canada geese, but finally developed sufficiently to provide good browse for migrant Canada's in October. The Stage Island field adjacent to the refuge south boundary and the Plum Island State Park was left fallow in 1971 to eliminate a problem which had developed of hunters slipping over the boundary and illegally killing geese when enforcement personnel were not present. Nelson's Island remained in permanent grass-legume cover as in the past.

Salt marsh areas reached normal productivity judging from waterfowl numbers and use patterns.

## II. Wildlife

### A. Migratory Birds

#### 1. Waterfowl

##### a. Canada Geese:

These birds were present throughout the year within or nearby the refuge, numbers depending upon season, food and weather conditions. Spring migration was on schedule with 800 Canada's showing up on the salt marshes by March 4th. Geese built up and lingered well into April this year with a peak of 4,500 noted the week of 4/2-8. The bulk of the birds left by May 1. Fall flight Canada's were first seen on Sept. 28 and refuge populations increased significantly the week of October 6 - 12 when 700 birds were seen. Migrating Canada geese were observed moving south on several occasions thereafter, some as late as December 24th. Total annual use days by Canada's (411,170) increased 20% over that recorded in 1970 (341,050) due chiefly to much heavier spring use in 1971. However, annual use days in 1971 were 8% under the 5-year (1966-1970) average level of 447,650 use days. The peak population in 1971 was 6,000 birds in late October - early November, the same as last year. Except for the heavier spring use seen in 1971, seasonal use patterns were similar to past years.

Production of Canada geese dropped off slightly in 1971 (18 broods with 80 goslings) from that seen in 1970 when we recorded 19 broods with 91 goslings. Each brood observed was 1 - 2 goslings below the average clutch of 4 - 5 in past years. Nesting occurred in the same areas as in the past, being centered in the North and South Pools, with an increase (total of 3 broods) seen in the Stage Island Pool. Muskrat houses, islands and points of land served as sites. Adults and young followed past practice of using the pools and adjacent salt marshes extensively as the young matured, and also made increased use of the newly seeded field units with a group of sub-adults during July - Sept. Migrant goose use of upland browse units was heavy in the fall and light during other times of the year, while their use of the refuge pools and tidal marsh was steady when they were open and available.

##### b. Other Geese:

Snow and blue geese were seldom seen in 1971. Unusual was the

COMPARATIVE  
ANNUAL USE DAYS  
FOR THREE KEY SPECIES

1966--1970

	<u>BLACK DUCK</u>	<u>CANADA GOOSE</u>	<u>GREEN-WINGED TEAL</u>
1966	1,229,925	494,685	102,030
1967	1,397,300	426,564	197,500
1968	1,267,100	513,940	244,960
1969	1,411,400	462,010	261,620
1970	<u>1,118,875</u>	<u>341,050</u>	<u>232,700</u>
5 Yr. Average	1,284,920	447,650	207,765
1971	907,750	411,170	187,230
Difference	-377,170	-36,480	-20,532



occurrence of a flock of up to 75 snow geese and 2 blue geese which showed up in late March and remained most of April. They kept their activities mainly to a section of tidal salt marsh just inside the north boundary of the refuge. The only other record of any of these species was the use by 10 snows which mingled with our Canada's from late October through November.

Brant were seen briefly in the spring when a flock of 25 was noted in Plum Island Sound in late March. Scattered observations of brant migrating through were made on one or two occasions in late October.

Goose days totalled 413,603 over 5,000 acres of habitat for a goose use per acre figure of 83. Production per wetland acre was .040.

#### C. Black Ducks:

During 1971 black ducks used the refuge and surrounding area every month of the year, their numbers fluctuating with season, food, weather and disturbance factors. They are usually the dominant duck in the area. Although migrations were generally similar to past years, overall black duck use days declined in 1971 (907,570 use days vs. 1,118,875 in 1970) by 19%. The major share of the drop occurred during the January - April period of the year (188,200 use days vs. 308,200 in 1970) as a result of severe icing conditions in the refuge during January and February which reduced duck use greatly during those months; however smaller declines in use also occurred in each of the other NR periods as well. The 907,570 use days, when compared with the 5-year average (1966 - 1970) annual yearly use level of 1,284,920 use days showed a decline of 29%. Despite the overall reduction in 1971 use, a peak population of 10,000 blacks was reached early in November, up 1,000 from last year's 9,000. Seasonal use by blacks was, except for the variation in winter use, very similar to past years. Black ducks utilized the normal wide range of habitats, including fresh water pools, tidal salt marshes and open ocean as conditions warranted.

Production of black ducks did not show any significant increase in 1971 based on broods observed. Twelve broods were seen and overall production was estimated at 160 young. This follows the trend of recent years. Black duck production was predominantly from natural nesting sites, although a small number of blacks continued to nest in artificial devices (wire nesting cones and wooden boxes) chiefly in Stage Island

Pool. We retain the hope that as natural imprinting continues more blacks will accept and use these devices.

d. Other Ducks:

Green-winged teal use dropped 19% under that seen last year (232,700 vs. 187,230 use days in 1971). The 187,230 use days was 10% under the five-year average (1966-1970) annual use level of 207,762 use days. The major portion of the decline in use this year occurred in the fall and early winter period (146,120 use days) when compared with that seen in 1970 (193,900 use days). A peak number of 4,000 green-winged teal was recorded in late October and early November, the same period as last year. Seasonal use, though reduced, was basically similar to that of past years. These birds utilized fresh and tidal marshes extensively. Only two broods were seen this year and an estimated 30 young were produced.

Mallard use days dropped to 70,020 in 1971 in contrast to last year's 92,230 - a reduction of 24%. The peak number noted was 500 in October. Ten broods of young were seen and production was estimated at 140 young. Mallards continued to utilize some of the artificial cones and boxes in the North, South and Stage Island Pools, as well as natural nest sites.

Blue-winged teal use increased some this year (65,840 compared with 47,920) partly due to the fact we reflooded the South Pool during early August. Peak numbers reached 1,000 in mid to late September. Eight broods of young blue-winged teal were seen and production was estimated at 120.

Gadwall continued to slowly increase as a nesting species with five broods seen and a total of 70 young were estimated as produced. Total use days were 12,890 with the summer and fall peak at 120.

All the other dabbling ducks usually expected in the area were seen in 1971. These included the usual early fall flight of widgeon which peaked in September at 1,000, pintail with a high early spring peak of 1,200, shoveler with a late October peak of 150 and wood ducks with a late June and July peak of 100.

Diving ducks continued to be seen in fewer numbers because habitat is so restricted. Seen during 1971 with peak numbers were scaup (50), bufflehead (100), goldeneye (50), ring-neck (20) and ruddy duck (100). Most of these birds use the Plum



Island River and Sound area with intermittent and seasonal use of the pools at certain times when they are open.

Mergansers, chiefly hooded mergansers (50), were seen on occasion in 1971. Red-breasted mergansers are present in the Plum Island Sound and occasionally in Stage Island Pool.

Total duck use days were 1,395,235 on 5,000 acres of habitat for a duck use per acre figure of 277. Duck production per wetland acre was .27.

## 2. Other Waterbirds:

American coots used the fresh water pools in fairly good numbers in 1971. (Total use was 58,660 compared with 74,021 in 1970). Peak number was 1,000, the same as last year's peak. Production of coots matched last year also, with an estimated production of 150 young in the pool system.

All other species normally expected in the locale were noted at the expected time. These included Common gallinules, which nested again in the pools and produced an estimated 200 young. Also seen were exceptional numbers of snowy egrets (with a peak of 375 in August) which built up through the summer in the area, 20 Common egrets in association with the snowys, a few glossy ibis (8) in May and up to 3 Louisiana herons. Virginia and sora rails nested in the pools again with limited production taking place.

Biological technician Dave Woodruff checked the Grape Island heron nesting colony in early June and found many herons but little in the way of active nests. He was unable to return later for another check for verification. However we estimated 100 young black-crowned night herons were produced in this colony. Dave also found a newly developing heron nesting colony in the Research Natural Area, just NE of sub-head-quarters, where it appears a few birds nested successfully. These birds may represent some that have shifted from the older Grape Island site and if kept undisturbed should build up in the future.

## 3. Shorebirds, Gulls and Terns:

Shorebird populations appeared similar to those of recent past years. Good flights of common species such as black-bellied plover, dowitchers, semi-palmated and least sandpipers and sanderlings occurred on schedule. Some rare or unusual species were also seen during the year, and these included golden plovers, a new high of 15 buff-breasted sand-

pipers, Baird's sandpiper and one avocet.

Gulls were present in the usual numbers and kinds insofar as could be seen. Included were black-backed, herring, ring-billed and Bonaparte's gulls. Terns were present in numbers and kinds generally similar to recent past years. These included common, least and black terns. The two separate colonies of common terns in our pools continued to nest successfully in artificial and natural sites, with 180 young produced showing a small increase from last year (150). A few least terns attempted to nest along certain portions of the beach with little success.

#### 4. Doves.

Mourning doves were seen almost on a year-round basis, except during the most severe periods. They reached greatest abundance in late summer and early fall around the cultivated field areas. Peak number was an estimated 1,000 on 8/18. Dave Woodruff, biological technician, did an excellent job in the pre-season banding of this species with 1,424 being banded during June - August.

#### B. Upland Game Birds.

Ring-necked pheasant were present throughout the year. Limited habitat sustains a small resident population with numbers concentrated around the rye fields and fresh water marshes. Movement to and from the mainland takes place as environmental conditions vary. Five broods were seen this past summer and an estimated 90 young pheasants were produced. Dispersal has occurred since then and at the close of the year an estimated total 70 birds remained.

#### C. Big Game Animals.

White-tailed deer are the only species in this group. Restricted habitat and heavy public use together exert a limiting effect upon the species. Some interchange to and from the mainland also occurs. No fawns were seen in 1971. At the close of the year an estimated four deer were on the refuge.

#### D. Fur Animals, Predators, Rodents and other Mammals.

Muskrats declined slightly based on estimates from fall house counts and observations. A good relationship between available food and animal numbers exists in the North Pool and Stage Island Pool. The South Pool was reflooded with salt

water in 1971 for loosestrife control and this condition, plus the fact that cattail and preferred food species are sparse in the unit, restricted muskrat numbers and activities. Use the past five-year period is given below.

Muskrat Populations (Fall)

	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
Stage Is.Pool	350(70) <sup>1</sup>	800(160)	700(140)	500(100)	450(90)
South Pool	20(3)	10(2)	-	-	10(2)
North Pool	<u>150(20)</u>	<u>750(150)</u>	<u>700(140)</u>	<u>500(100)</u>	<u>500(100)</u>
	520 <sup>2</sup>	1,560	1,400	1,000	960

1. Figures in parenthesis represent number of houses.

2. Figures estimated and based partially on house counts.

A number of mammals and rodents were seen during the year. Included were red fox, and rarely gray fox and raccoons. Striped skunks, woodchucks and weasels were present in normal numbers. Norway rats were seen in open areas during milder portions of the year.

Numerous cottontailed rabbits were present in and around the dunes, brush and fields over the year. They serve as an excellent prey species for fox, weasel, hawks and owls and are a productive and interesting part of the dunes ecology.

E. Hawks, Eagles, Owls and Crows.

All of the usually expected species in this area were observed during the past year. The rarities, such as the peregrine falcon and gyrfalcon were only seen on one or two occasions in the fall but marsh hawks and other more common raptors were relatively abundant during migrations (up to 10 seen on one trip through the refuge in October). Sparrow hawks were also seen regularly during the year.

American rough-legged hawks showed up on 11/1 with up to 6 seen as a peak later on in the year.

An immature bald eagle, a real rarity now, was seen soaring southward over refuge headquarters on 11/22/71. In addition a golden eagle remained over a period of several days on the southern half of the refuge during early November. Most years we see none of these birds since they have declined so greatly.

A Black phase gyrfalcon remained on the refuge for three days in late November.

Snowy owls arrived in November along with the rough-legged hawk. A total of eight Snowys were recorded on the refuge in December. Short-eared owls were seen sporadically during fall migration period.

F. Other Birds:

Other birds of particular interest seen in 1971 included snow buntings, and mocking birds.

G. Fish:

Surf fishing from the refuge ocean beach was as usual unpredictable in nature. Except for "regulars" (fishermen who spend much time here) who occasionally hit good fishing on schoolies, (striped bass ranging from 2 - 10 lbs. in weight) most of our visiting fishermen did not fare too well. Large fish ranging up to 41 lbs were taken but were exceptionally rare.

An informal summer program was set up which set aside a special fishing area on the north side of the Cross Dike of the North Pool to allow crippled children from Camp Sea Haven to engage in another interesting and meaningful activity. They were permitted to take white perch which are resident in the unit. They range in size from 7 - 9 inches with occasional individuals attaining 13" in length. This self-sustaining population of these gamy and tasty little fish provided considerable enjoyment to these crippled children affected with Muscular Dystrophy and Cerebral Palsy.

H. Reptiles.

Nothing to report.

I. Disease.

Nothing to report.

## III. Refuge Development and Maintenance

A. Physical Development:1. Marsh and Water.

- a. Serviced duck nesting devices.
- b. Mowed woody vegetation on North and South dikes.

2. Roads and Trails.

- a. Cut brush along the roadside by parking lot entrances to improve visibility and safety.
- b. Hauled and spread 277 yards of crushed gravel on refuge road.
- c. Graded refuge road numerous times during the year and plowed snow as necessary.
- d. Repaired damaged fence and parking lot bumper rails along road damaged by vandals and vehicles.
- e. Constructed vehicle bumper rail around parking lot #2.
- f. The Hellcat Nature Trail had several improvements made; two elevated boardwalks were installed over wet areas, overhanging brush was cut, woodchips placed in sandy areas to stabilize the sand and make walking easier for the public. A series of wooden ramps leading to the top of a high dune were installed to minimize dune damage.

3. Fencing and Posting.

- a. During the year regulation, directional and informational type signs were erected and taken down as season and public use dictated. Damaged signs were repaired.
- b. Entire refuge boundary was checked and new posts and signs replaced where needed. Posts which were broken or bent by heavy ice movement were removed.

4. Buildings.

- a. Routine maintenance of buildings was conducted as required during the year. Repaired major plumbing problem at quarters one. Fabricated and installed an improved "money tree" and locking device. Installed two non-seep type holding tanks on the two biffies located at the Cross dike. Replaced rusted out exterior metal door in office entry way with a wooden door. Painted exterior of head-



quarters oil shed, residence garage, and subheadquarters equipment building. Interior painting at headquarters included the entryway and rest room.

5. Equipment.

- a. Fabricated and painted three steel life guard towers from used metal.
- b. Three aluminum overhead doors were picked up excess from Montezuma Refuge. One was installed in the equipment building at sub-headquarters.
- c. Received a 1952 Jeep from surplus.
- d. Two vehicles were sold during the period: a 1961 Ford pickup and a 1964 Dodge power wagon.

B. Plantings.

- 1. Aquatic and marsh plants. None.
- 2. Trees and shrubs.
  - a. Transplanted ten 3 to 5 foot black pine from the dune area to Camp Sea Haven. Survival of this planting was very poor.
- 3. Upland Herbaceous Plants: None.
- 4. Cultivated Crops.
  - a. Fifty-one acres were plowed, disc harrowed and seeded to Winter Rye (Balboa) for goose browse at the following sites, Cross Farm 25 acres, South Pool 8 acres and North Pool Edge 20 acres. All 51 acres were top dressed with 500 lbs. of 10-10-10 fertilizer per acre.

The 16 acre Nelson's Island field which was planted in 1968 to a grass mixture was mowed during the season to encourage use by geese.

Following is a table showing use of these plantings by Canada Geese during the fall season.

Progressive Use of Winter Rye Browse by Waterfowl

	<u>% of Total Winter Rye Browse Crop</u>
Sept. 1	5%
15	5%
Oct. 1	10%
15	15%
Nov. 1	20%
15	25%
Dec. 1	5%
15	5%
	<u>90%</u>

C. Collections and Receipts.

1. Seeds and other Propagules. None.
2. Specimens: None.

D. Control of Vegetation.

1. The North and South pool dikes were spot mowed to control woody vegetation consisting of Sumac, Wild Cherry, Poplar and scattered other species.

See Section V for comments on Purple Loosestrife control.

E. Planned Burning. None.

F. Fires. No fires occurred during the period.

## IV. Resource Management

A. Grazing.

None.

B. Haying.

One special use permit was issued for the harvest of 25 tons of salt hay. Fee \$25.00.

C. Fur Harvest.

None.

D. Timber Harvest.

None.

E. Commercial Fishing.

None.

F. Other Uses.

Receipts from the Special Use Permits for rental of land and/or buildings amounted to \$725.00.

Three Special Use Permits were issued to the Colonial Retriever Club for the purpose of conducting three retriever trials.  
No charge.

The following table on fees covers a 5-year period.

	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
		(\$7.00)	(\$7.00)	(\$10.00)	
				Not	
Golden Eagle	7,497	8,729	9,177	available	11,350
\$5.00 Refuge Season Permit	-	-	-	8,155	-
Daily vehicle Tickets \$1.00	13,876	19,072	19,938	18,513	25,000
Daily Individual Tickets \$.50	155	265	271	233	150
\$2.00 Individual Seasonal	-	-	-	10	-
\$2.00 Annual Supplemental Fee	-	-	-	40	-
Money Tree	1,237	1,502	4,023	9,740	7,881
Grand Total	\$22,765	\$29,568	\$33,409	\$36,691	\$44,381
Period of Fee Collection	1/1-12/31	1/1-10	4/1-10/15	4/17-10/15	
	1967	1968	1969	1970	1971
Total Public Use Visits	184,935	210,525	231,300	217,037	244,916

MOURNING DOVE BAND RECOVERIES 1968 - 1971

(From all sources thru Dec. 31, 1971)

PARKER RIVER NATIONAL WILDLIFE REFUGE

	<u>No. Banded</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>Total</u> <u>No.</u>	%
1968	108	1	-	-	-	1	(1)
1969	506	-	1	7	1	9	(2)
1970	1,020	-	-	6	9	15	(1)
1971	<u>1,424</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>6</u>	<u>6</u>	<u>(.4)</u>
Total	3,058	1	1	13	16	31	(1)

1. No birds were recovered North of Massachusetts.
2. Point of furthest recovery: Louisiana.
3. No. of local recoveries (within 5 miles) 15; 2 others in Mass.
4. Out of State recoveries: 14.
5. Recoveries in other states: Pa. 4, Md. 3, Ga. 2, Va. 2, N.C. 1, N. Y. 1 and La. 1.
6. 77% of recovered birds were immatures when banded, 23% were adults.



## V. Field Investigation or Applied Research

### A. Waterfowl Banding.

A total of 1,241 birds was banded in all operations (see NR-1D form) as our contribution to the annual Atlantic Flyway Banding Program. Included were 117 Black ducks taken in post season (Winter) trapping by State of Massachusetts personnel on our sites using refuge bands and assistance. A special one-day drive on our local Canada geese resulted in 87 geese banded at a cost of \$1.83 per bird. The July - Sept. portion of the pre-season banding was ably done by our biological technician Dave Woodruff, assisted part time by various interested students working in other capacities at the refuge. 1,037 birds were banded at a cost of \$1.06 per bird.

### B. Dove Banding.

Mourning dove banding increased significantly again over last year in the expanded effort to learn more about the eastern population. The summer biological technician again aided by help from the temporary summer employees did an excellent job with 1,424 doves banded compared with 1,020 banded last year. They used 50 modified Kniffin traps with wheat bait very effectively. Predation problems from marsh hawks, foxes and weasels were a periodic source of difficulty. Cost per dove banded was .50.

### C. Purple Loosestrife Control.

Following a year of no treatment (1970), in early August of 1971 the South Pool was flooded for a period of two weeks with salt water in our informal experimental program to biologically control loosestrife. The single flooding did exert a killing effect upon mature and developing loosestrife (particularly further out in the pool where greater depth kept some of the plants flooded for a longer period of time) as it has done in the past. Marginal stands of plants which serve as a constant source of seed had been sprayed earlier in July with Ammate X (ammonium sulfate) in a portion of the pool with the hope that a combined approach to control would be more effective. Twelve acres were sprayed in this manner.

The two transect lines across the South Pool were run by the biological technician this year as in past years. Differences in plant composition between 1970 and 1971 did not appear to be significant.

In essence we will need to use both biological and chemical methods of control jointly to effect increased control over this very tough and adaptable pest plant. Even with a combination approach we will not be able to eradicate it, but hopefully will be able to keep it to a tolerable level for management purposes.

#### D. Artificial Nesting Devices.

All nesting devices in the pools were filled with nesting material and refurbished prior to the active nesting season. Again this year, as in last year, the devices were only checked once early in the nesting season (mid-May) to see what and how many ducks attempted to nest in them. No standard nesting study data was gathered because of the disturbance factor involved. Given below are results of the check.

#### Waterfowl Use of Nesting Devices 1971

		<u>North Pool</u>		<u>Remarks</u>
<u>Nest Devices</u> <u>Type &amp; No. Available</u>		<u>Use</u> <u>No. &amp; Percent</u>		
Wire Cones	25	8	32	Mallards attempted nesting in 7 devices, Black duck in one.
Wood Box	10	6	60	Mallards attempted nesting in 6 devices.
		<u>South Pool</u>		
Wire Cones	5	1	20	Mallard attempted nesting in 1 device.
Wood Box	2	1	50	Mallard attempted nesting in 1 device.
		<u>Stage Island Pool</u>		
Wire Cones	30	3	10	Mallards attempted nesting 1 device, Blacks in 2 devices.
Wood Box	10	4	40	Mallards attempted nesting in 2 devices, Blacks in 2 others.
Total	82	23	28	

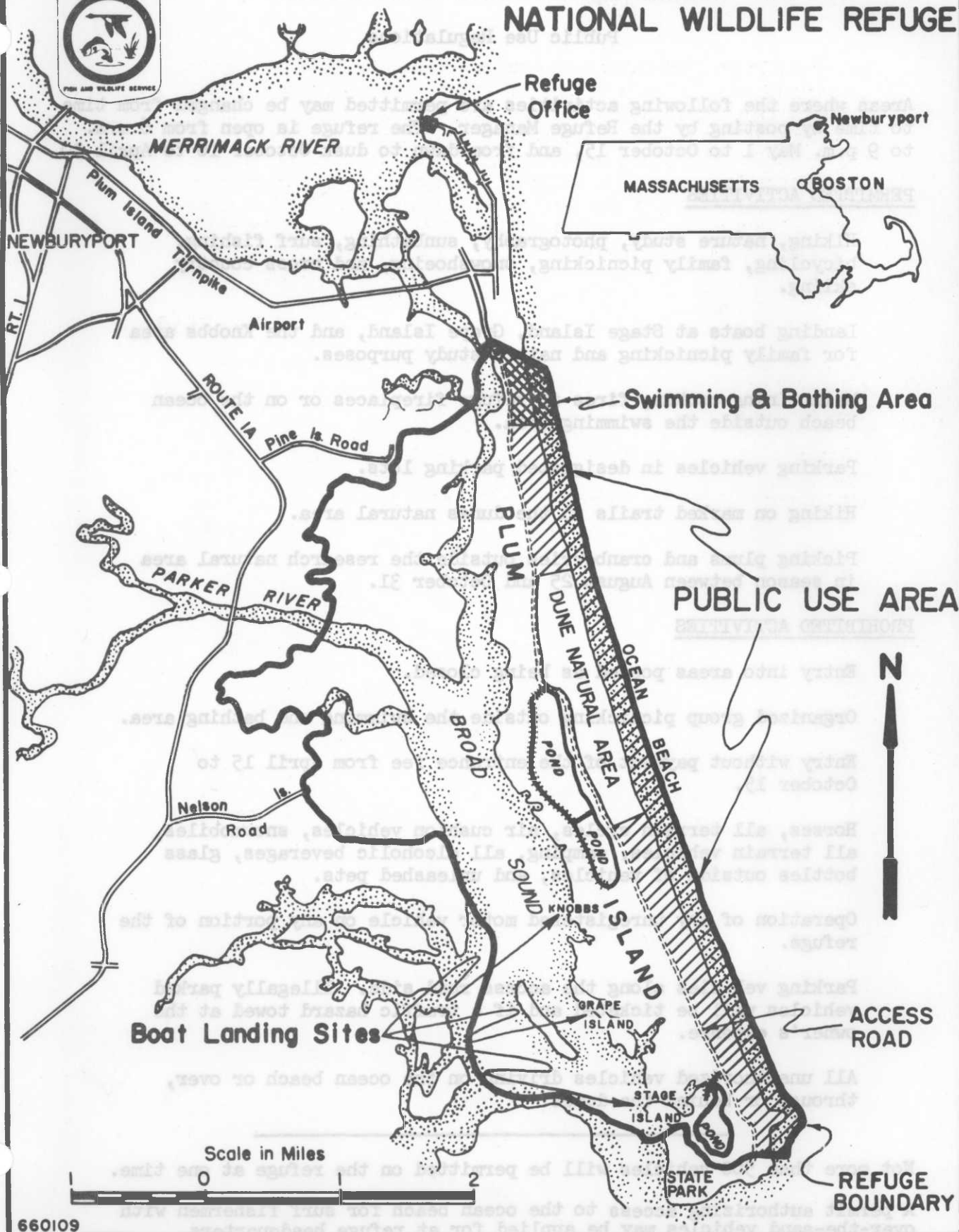
There is still a poor acceptance by waterfowl of all nesting devices at Parker River. However, wooden box use increased this year to 50% in attempts to nest although the sample is very small. The wire cones have not been up as long as the wooden boxes, but hopefully will prove out in another couple of years. Assuming we can imprint more young waterfowl, particularly blacks, to these devices, and that hens survive in sufficient numbers to return and build up we are hopeful that the wire nest cones will ultimately be utilized to a much greater extent.

E. Natural Area.

The Research Natural Area of 150 acres continued to be subjected to occasional human intrusion from people walking the beach as well as those parking just outside the north boundary and cutting through the area to the beach. These incursions usually took place during busy summer peak use periods and have caused us problems in maintaining the integrity of the area. Signs were replaced and upgraded as needed around the area.



# PARKER RIVER NATIONAL WILDLIFE REFUGE



## PARKER RIVER NATIONAL WILDLIFE REFUGE

### Public Use Regulations

Areas where the following activities are permitted may be changed from time to time by posting by the Refuge Manager. The refuge is open from 6 a.m. to 9 p.m. May 1 to October 15, and from dawn to dusk October 16 to April 30.

#### PERMITTED ACTIVITIES

Hiking, nature study, photography, sunbathing, surf fishing, bicycling, family picnicking, snowshoeing, and cross country skiing.

Landing boats at Stage Island, Grape Island, and the Knobbs area for family picnicking and nature study purposes.

Maintaining cooking fires in refuge fireplaces or on the ocean beach outside the swimming area.

Parking vehicles in designated parking lots.

Hiking on marked trails in the dunes natural area.

Picking plums and cranberries outside the research natural area in season between August 25 and October 31.

#### PROHIBITED ACTIVITIES

Entry into areas posted as being closed.

Organized group picnicking outside the swimming and bathing area.

Entry without payment of the entrance fee from April 15 to October 15.

Horses, all terrain cycles, air cushion vehicles, snowmobiles, all terrain vehicles, camping, all alcoholic beverages, glass bottles outside of vehicles, and unleashed pets.

Operation of any unregistered motor vehicle on any portion of the refuge.

Parking vehicles along the access road side. Illegally parked vehicles will be ticketed and if a traffic hazard towed at the owner's expense.

All unauthorized vehicles driving on the ocean beach or over, through or behind the dunes.

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Not more than 500 vehicles will be permitted on the refuge at one time.

A permit authorizing access to the ocean beach for surf fishermen with over-the-sand vehicles may be applied for at refuge headquarters.



## VI. Public Relations

A. Recreational Uses.

Non-wildlife oriented public use was heaviest between Memorial day and Labor day as in past years. Use of the refuge increased over last year from Feb. to Aug. and decreased for the other five months due to cold temperatures, snow and heavy rain. Total visits increased 12.8% to 244,916 from last year's 217,037. The largest total visits (46,599) and the peak load day (4,000) both occurred in June. Use tapered off from June to Dec.

Sightseeing, picnicking, wildlife observation and swimming respectively continued to be the preferred activities of the visiting public. A full listing of the various types of use is presented in the recreational use report (3-123) included with the N R forms.

Parker River was designated a fee collection area for the seventh consecutive year under provision of the Land and Water Conservation Fund Act of 1965. Fee collections totalled \$44,378.72 for the 1971 season, an increase of \$7,687.17 over last year's \$36,691.55. The Golden Eagle pass was revived this year at a cost of \$10. This was sold in place of the \$5.00 season pass sold last year for this refuge. In addition the "money tree", our honor system entry fee collection device, was operated again this year when a gateman was not on duty. During the summer season, the refuge entrance gate was manned from 8:00 A.M. to midnight on Friday, Saturday, and Sundays.

The location of Plum Island State Park at the extreme south end of the refuge continued to compound fee collection problems. No fee can be charged for this area, and the only access to it is by way of the refuge road.

B. Refuge Visitors.

<u>Visitors</u>	<u>Organization</u>	<u>Date</u>
J. Grandy	Univ. of Mass.	1/11/71
Ralph Abele	U. Mass. -Coastal Res.	1/20/71
Peter Rosen	U. " " "	
Drs. Wright & Dent	Gordon College, Wenham	1/30/71
Richard S. Short	Mass. Dept. of Ed.	3/17/71
W. S. Kelly	Dept. of Public Health	3/26/71
Paul W. Schafer	Univ. of Maine	3/30/71
Robert Lightzer	Leader - Explorer Troop 91	4/19/71
Howard D. Woon	Regional Supv. RF-Boston	6/18/71
Kenneth McGearry	Dept. of Zool, U. N. H.	7/30/71
Dr. William Hummon	" " " Ohio U.	6/29 & 7/30

<u>Visitors</u>	<u>Organization</u>	<u>Date</u>
John E. Ayers	Natural Science Magazine	9/11/71
Thomas Perkins	Fishery Biologist, Mass.	
	Dept. Natural Resources	9/15
James E. Farley	Chain Bridge Dist. Boy Scouts	9/22
Berlin Heck	Great Meadows N. W. R.	9/30
Robert Shields	Div. Ref. BSW, Wash, D.C.	10/14
William French	Refuges, R.O. Boston	10/14
Frank Graves	Asst. Dir. Mass. Div. of Law Enforcement	10/15
Robert Wetmore	Interior Dept. Auditor, Portland, Ore.	11/2
Edith Gilroy	R.O. Boston, Retired	12/1
Katherine Hanley	Accompanied Miss Gilroy	12/1
Carl Sundstrom	E.G. & G. Inc., Waltham	12/2

In addition to the above individuals, personnel from the State Division of Fisheries and Game, Law Enforcement, Marine Fisheries, the Dept. of Natural Resources, state and local police, Coast Guard, and the Division of Management and Enforcement made repeated visits.

#### C. Refuge Participation.

1. Newspaper coverage of the refuge and its activities totalled 866 column inches of newsprint and photographs.
2. Conducted Tours: Refuge personnel conducted 16 tours for a total of 679 people.
3. Talks: A total of 16 outside talks was presented to 1144 people during the year. Talks and conducted tours were purposely de-emphasized and requests were turned down as an economy measure mandated by the Regional Office this year. Emphasis was directed to getting the people to the refuge to participate in activities there.
4. Radio and T. V.: Manager Moses presented two taped radio interviews, totalling 36 minutes, concerning the Johnny Horizon cleanup, and one T. V. interview during the fall Ecology in Action workshop held Sept. 26 at the refuge. Activities of the workshop group were videotaped, and given 12 minutes of air time Oct. 6 on the WHDH T.V. (Boston) news program "The Week Ends Here".
5. Meetings. ~~Twenty~~ Twenty-six meetings were attended by refuge personnel during 1971.

The annual Johnny Horizon cleanup cosponsored by the Bureau, the Plum Island Surfcasters, Plum Island Taxpayers Association, and the Mass. Beach Buggy Association was held April 25, 1971. The 375 participants included scout and civic groups, school clubs,

## PLANNING COMMITTEE

Joseph Balsama, Swampscott Public Schools

Richard Cucchiara, Pope Paul School,  
Revere

Herbert Drury, Carr School, Newton

William Forward, Parker River Wildlife  
Refuge

Ralph Goodno, Massachusetts Cooperative  
Extension Service

Ligi Kelsey, Belleville School, Newburyport

Robert Knights, Pentucket Regional High  
School, West Newbury

Constance Lunt, Swampscott Public Schools

Johnnes Moore, Salem State College

Edward Moses, Director, Parker River Wild-  
life Refuge

Raymond Oberst, Bureau of Sports Fisheries  
and Wildlife, U.S. Fish and Wildlife  
Service

Alan Railsback, Salisbury Memorial School

Elliott W. Whalen, Bureau of Sports Fisheries  
and Wildlife, U.S. Fish and Wildlife  
Service

Harold Wiper, Newton High School

## NOTES

Teachers attending the workshop have a choice of participating in two of the five units offered. Those interested in the Dune Detecting should bring a small plastic bucket, trowel, wooden stakes (2), string, baggies, and notebook. For the Transect Unit, bring trowel, thermometer, plastic bags, string and notebook. We urge those who intend to go on the Scavenger Hunt to purchase the following books prior to May 15: "Life in the Shifting Dunes" by White (available from Publications Dept., Museum of Science, Science Park, Boston 02114 for \$1.75. Checks payable to Museum of Science) and "Canadian and Atlantic Seashells" by Bousfield (available from the National Museum of Canada, Publications Dept., Ottawa 4, Canada — \$1.30 payable to Receiver General of Canada).

Teachers interested in Nature's Art should bring their own art supplies.

Please dress in your hiking clothes, bring your own lunch (we'll furnish the coffee and tonic), and be at the main parking lot near the entrance gate at 9:00 A.M. to start the program.

May 22 will be our alternate date in case of inclement weather on May 15th.

## ECOLOGY WORKSHOP

at the

## PARKER RIVER WILDLIFE REFUGE

NEWBURYPORT, MASSACHUSETTS



**SATURDAY**

**MAY 15, 1971**

**9:00 A.M. — 3:00 P.M.**



Conducted by

DEPARTMENT OF THE INTERIOR,  
Parker River National Wildlife Refuge

COOPERATIVE EXTENSION SERVICE,  
University of Massachusetts,  
United States Department of  
Agricultural and County Extension Offices

ESSEX AGRICULTURAL & TECHNICAL  
INSTITUTE



## WORKSHOP

A program designed for teachers who desire:

- New Ways to Teach Ecology
- Prepared Lessons Coordinated with Specific Sites
- Lessons Which are Stimulating, Relevant, Easy to Teach, and that Involve the Student
- Lessons that Emphasize the Interdependencies of Nature
- Techniques of Outdoor Instruction

The program will be held at the Parker River Wildlife Refuge, Newburyport on Saturday, May 15, 1971 from 9:00 AM to 3:00 PM.

All units are adaptable to elementary and secondary levels.

## PROGRAM

9:00 A.M. — Welcome and Directions for the Workshop —

**Edward Moses**, Director, Parker River Wildlife Refuge

**Ralph H. Goodno**, Cooperative Extension Service

9:30 A.M. — 12:00 NOON

Select one of the following units for the A.M. Workshop Sessions.

A. **Dune Detectives** — Washover on a barren island.

Harold Wiper, Newton High School

Herbert Drury, Natick Schools

Joseph Balsama, Swampscott Schools

B. **Ecology Survey** — Transect on the Dunes and Salt Marsh.

Alan Railsback, Salisbury Memorial School, Salisbury

Ligi Kelsey, Belleville School, Newburyport

C. **Salt Marsh Survey — Contour Mapping**  
Robert Knights and other members of the Science Department at the Pen-tucket Regional High School, West Newbury

12:00 Noon — 1:00 P.M. — LUNCH

Congregate at the Picnic Tables at Sea Haven for Lunch

1:00 P.M. — 3:00 P.M.

Select one unit for the afternoon

D. **Scavenger Hunt**

Arthur Chesmore — Massachusetts Department of Natural Resources, Division of Marine Fisheries

William Jerome — Massachusetts Department of Natural Resources, Division of Marine Fisheries

E. **Nature's Art** — Sketching, painting and crafts

Mary Woyciechowski — Salisbury Memorial School

Constance Lunt — Swampscott Schools

## REGISTRATION FORM

ECOLOGY WORKSHOP at the PARKER RIVER WILDLIFE REFUGE  
MAY 15, 1971

Attendance Limited — Please Register Before May 7, 1971

Registration Fee — \$2.00 (Includes bussing and coffee or tonic)

Make checks payable to Ecology Workshop Fund and Mail To: RALPH H. GOODNO, Cooperative Extension Service, Essex Agriculture & Technical Institute, Hathorne, Massachusetts 01937. Phone 774-0050.

FULL NAME ..... Phone .....

ADDRESS ..... (Street) ..... (Town) ..... SCHOOL .....

ZIP CODE .....

PROGRAM ANNOUNCEMENT

ECOLOGY WORKSHOP

AT

THE PARKER RIVER NATIONAL WILDLIFE REFUGE

SATURDAY, SEPTEMBER 18, 1971

PROGRAM

8:00 A.M. Bus trip to Camp Sea Haven from the parking lot. Park and lock your car in the main parking lot ( just beyond the entrance gate), and board the bus.

8:30 A.M. Welcome and Directions for the Workshop - Ralph Goodno

Panel - The Nature of Plum Island

- Geology - Robert Knights, Pentucket Regional High School
- Ecology - Harold Wiper, Newton High School
- Wildlife - Alan Railsback, Salisbury Memorial School

10:00 A.M. Presentations by Elliott Whalen, U.S. Fish and Wildlife Service. Coffee break.

10:30 A.M. Field work - join one of the following groups for your outdoor lab:

- Soil Profiles in the Tidal Area - Harold Wiper and Herbert Drury, Natick Public Schools
- Transect on the Salt Marsh - Alan Railsback, and Ligi Kelsey, Belleville School, Newburyport
- Contour Mapping the Dunes - Robert Knights and members of the Science Department, Pentucket Regional High School

12:30 P.M. Lunch - Bring your own - we'll serve coffee and tonic

1:00 P.M. Group summaries and post learning activities

2:00 P.M. Nature's Art - ways for students and teachers to express the form and design of nature in their ecology projects - Susan Latham, Special Art Instructor, Newburyport

2:30 P.M. How the Parker River National Wildlife Refuge Can Serve You - Director Edward Moses

3:00 P.M. End of the Workshop, if you'd like to explore the beaches and dunes of Plum Island on your own, now's the time. Good luck.

EQUIPMENT REQUIRED

- For Soil Profiles - Bucket, Trowel, Stakes, String, Baggies and Notebook
- For Transect - Trowel, Baggies, String, and Notebook

SEPTEMBER 25 will be our alternate rain date. If raining, threatening or forecast is rain, on the 18th, Plan on the 25th.

Ralph H. Goodno  
Community Resource Development Specialist

RHG:mob



and private citizens. Fifteen cubic yards of trash were removed from Plum Island. The 50,000 16 X 18 inch Johnny Horizon Litterbags received from the Bureau of Land Management were issued to refuge visitors, one per automobile. Utilization of the bags to remove beach litter was so successful that two additional four cubic yard trash containers were rented to handle the additional litter removed from the beach front. People were not only removing their own litter but other peoples' also. We were overwhelmed and overjoyed at the response by our visitors.

Manager Moses and Biologist Forward worked with Bill Whalen, R.O. Conservation Education Coordinator, and Ralph Goodno, Essex County Resource Development Specialist, and several teachers to develop and print a series of environmental education lessons known as the P.R.E.P. Handbook. The handbook was printed by the New York State Drug Rehabilitation Center at Iroquois N.W.R. (See example included with photos).

Two P.R.E.P. workshops were held at the refuge this year in cooperation with the local teachers who present the P.R.E.P. lessons and the Essex County Extension Service. The spring workshop held May 15, was booked to capacity with 100 registrants. 40 additional teachers had to be turned away. Out of the 100 enrolled, 90 participated. The September 25th workshop had 26 teachers in attendance. The small turnout for the fall workshop was attributed to the postponement from the original Sept. 18th date due to weather and other fall season conflicts.

The refuge participated in the Topsfield Fair again this year with a display in the tent sponsored by the League of Essex County Sportsmen's Clubs. The display included electrical Parker River and Monomoy displays, a slide show, and a cage housing several species of ducks common to the refuge.

#### D. Hunting.

1. The public hunting program was the same as for 1970 with three public hunting areas of 1,035 acres, 290 acres, and 265 acres respectively. Area A, the largest of the three is a boat access only area with a daily limit of 100 hunters. Access to areas B and C is gained by foot from designated parking areas. A maximum of 50 hunters per day is allowed on these two areas. A twenty-five shell per hunter limit was continued for the second year in an attempt to control sky busting and resultant leading of the marsh. We continued to require permits for opening days, holidays, and Saturdays throughout the season.

Massachusetts hunters chose a zoned duck season and a split goose season this year. Goose season began statewide Oct. 20th and closed Nov. 11th. It reopened Nov. 23rd with the coastal duck season and closed Jan. 8th. Duck season was zoned with U.S. Route 1, Route 3 to the Cape Cod Canal, and Route 6 to the Rhode Island border the east-west dividing line. The inland season opened Oct. 20th and closed Nov. 28th. The coastal season opened Nov. 23rd and closed Jan. 1st. Parker River was in the coastal zone. As you can imagine, we had our hands full with gunners shooting ducks in the closed coastal zone while they were legally hunting for geese from Oct. 20 to Nov. 11th.

Regular Waterfowl Seasons - 1971

Ducks	Inland	Oct. 20 - Nov. 28
	Coastal	Nov. 23 - Jan. 1
Geese (statewide)		Oct.. 20 - Nov. 11 and Nov. 23 - Jan. 8
Scaup (special season)		Jan. 3 - 18, 1972
Hunters participating		1,500
Birds killed		538
Estimated cripples		215
TOTAL KILL		753
Birds per hunter		.5

(Excluding Y.W.T.P.)

Because of zoning, duck season opened late (Nov. 23) at the refuge this year with low success. Species composition of the kill was largely limited to black ducks, since most of the teal and other early migrants had left our area. Goose season opened earlier (Oct. 20) with 202 birds (Canadas) killed thru the entire season. Fall weather continued into December, and geese lingered longer into the late season.

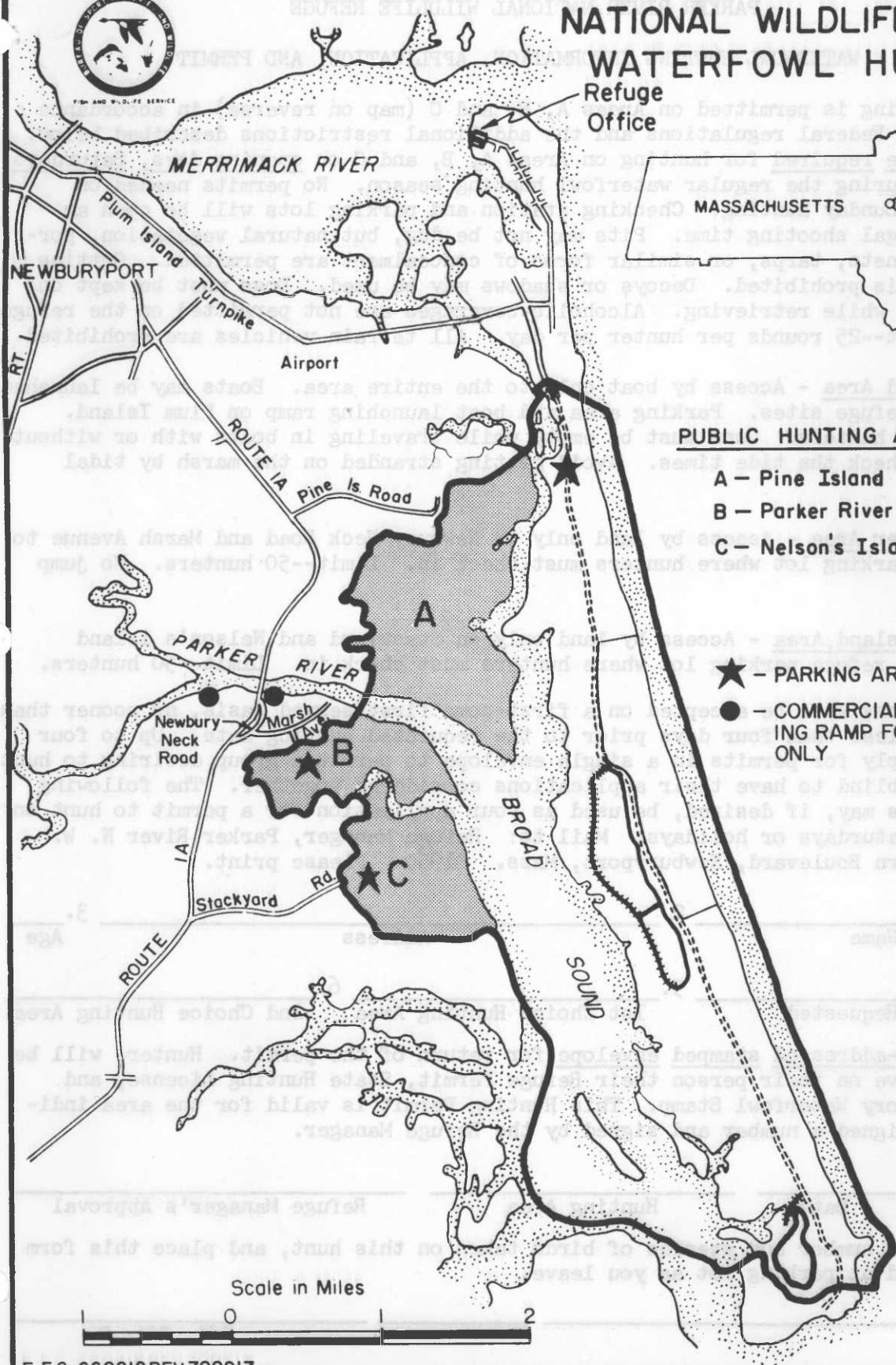
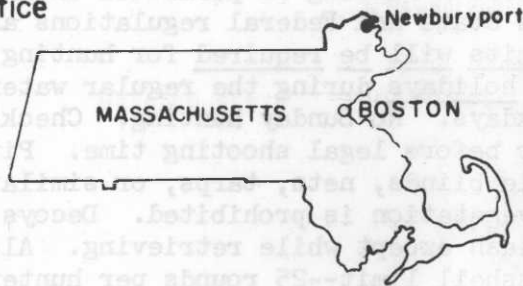
Area A continued to be the most productive of the three. Its location across a major feeding flight line contributes to its productivity. Areas B and C do not get as many flights. Hunter success on Area B was the lowest of the three areas.

U. S. DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE



# PARKER RIVER NATIONAL WILDLIFE REFUGE WATERFOWL HUNTING

Refuge  
Office



## PUBLIC HUNTING AREAS

- A - Pine Island
- B - Parker River
- C - Nelson's Island

- ★ - PARKING AREAS
- - COMMERCIAL BOAT LAUNCHING RAMP FOR AREA "A" ONLY



Scale in Miles





U. S. DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE  
PARKER RIVER NATIONAL WILDLIFE REFUGE

WATERFOWL HUNTING INFORMATION, APPLICATION, AND PERMIT

Waterfowl hunting is permitted on Areas A, B, and C (map on reverse) in accordance with State and Federal regulations and the additional restrictions described below. Permits will be required for hunting on Areas A, B, and C on opening days, Saturdays and holidays during the regular waterfowl hunting season. No permits needed on weekdays. No Sunday hunting. Checking station and parking lots will be open an hour before legal shooting time. Pits may not be dug, but natural vegetation, portable blinds, nets, tarps, or similar forms of concealment are permitted. Cutting of vegetation is prohibited. Decoys or shadows may be used. Dogs must be kept on a leash except while retrieving. Alcoholic beverages are not permitted on the refuge. Shotshell limit--25 rounds per hunter per day. All terrain vehicles are prohibited.

- A. Pine Island Area - Access by boat only to the entire area. Boats may be launched from off refuge sites. Parking area and boat launching ramp on Plum Island. Limit--100 hunters. Guns must be empty while traveling in boats with or without motors. Check the tide times. Avoid getting stranded on the marsh by tidal change.
- B. Parker River Area - Access by land only on Newbury Neck Road and Marsh Avenue to a refuge parking lot where hunters must check in. Limit--50 hunters. No jump shooting.
- C. Nelson's Island Area - Access by land only on Stackyard and Nelson's Island Roads to a refuge parking lot where hunters must check in. Limit--50 hunters.

Mail applications will be accepted on a first-come first-served basis, no sooner than two weeks nor less than four days prior to the requested hunting date. Up to four hunters may apply for permits in a single envelope to permit a group desiring to hunt from the same blind to have their applications considered together. The following numbered spaces may, if desired, be used as your application for a permit to hunt on opening day, Saturdays or holidays. Mail to: Refuge Manager, Parker River N. W. Refuge, Northern Boulevard, Newburyport, Mass. 01950. Please print.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_  
Name Address Age

4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_  
Date Requested 1st Choice Hunting Area 2nd Choice Hunting Area

Enclose a self-addressed stamped envelope for return of the permit. Hunters will be required to have on their person their Refuge Permit, State Hunting License, and Federal Migratory Waterfowl Stamp. This Hunting Permit is valid for the area indicated when assigned a number and signed by the Refuge Manager.

Permit No.	Date	Hunting Area	Refuge Manager's Approval
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Please indicate number and species of birds taken on this hunt, and place this form in box provided at parking lot as you leave.


## 1971 Youth Waterfowl Hunting Program

Date October 23, 1971

<u>Student</u>	<u>Instructor</u>	<u>No. and Species Killed (See Key)</u>	<u>No Shots Fired</u>
1. Gerald Pratt	Lonny Brockelbank	3	4
2. Steve Goodwin	Ray Goodwin	0	12
3. Edward Stewart	Clint LeBlanc	0	5
4. Richard Valcourt	Frank Bateman	1	14
5. David Brishois	Edwin J. Kaine	1	5
6. Steve Viviano	Victor Wishneusky	3	24
7. Joseph D'Ambrosio	Joe D'Ambrosio	0	8
8. Thomas Williams	Harold Williams	0	6
9. Tom Capp	Charles Elliott	0	2
10. Dean Cuam	Bob Woodman	0	5
11. Steve Woitkun	James Bateman	1	3
12. Gerry Zadeliski	Bill McLaughlin	0	0
13. John Fitzgerald	Dennis Bolduc	0	0
14. Dave Griskeyrich	Bruce Poore	0	12
15. Keith Desmond	George Smith	3	18
16. _____	_____	_____	_____
17. Dave Hollenborg	Father	2	20
18. _____	_____	_____	_____
19. Scott Williams	Porter Perkins	2	12
20. Donald Hatch	Bob Brophy	3	17
21. Kevin Desmond	Dave Ross	2	25
22. Richard Farley	George Peters	1	25
23. Mike Snow	Paul Rivet	0	3
24. Tom Ross	Walter Gregory	0	8
25. Dave Prouillette	Bill Ring	2	8
<b>TOTALS</b>	23	24 geese	236 shots

Key

A. - Canada Geese	D - Green-winged Teal	C - Widgeon	J - Merganser, RB
B - Black Duck	E - Blue-winged Teal	H - Shoveler	K - Merganser, Hooded
C - Mallard	F - Pintail	I - Merganser, AM.	L - Other

No. shots per bird 9.8No. shots per hunter 10.26No. birds per hunter 1.04

## 1971 Youth Waterfowl Hunting Program

Date October 25, 1971

<u>Student</u>	<u>Instructor</u>	<u>No. and Species Killed (See Key)</u>	<u>No Shots Fired</u>
1. David Courcy	Frank Bateman	0	10
2. John Divencenzo	Freeland Archibald	2	15
3.			
4.			
5. David Unsworth	Richard Unsworth	0	8
6. Russell Chaput	Clint LeBlanc	1	7
7. Micheal Sheehan	John Curtin	1	5
8. Joe Dallorso	Walter Gregory	0	5
9.			
10.			
11.			
12.			
13.			
14. Bob Zaino	Alfred Zaino	0	5
15. Anthony Hubert	Paul Rivet	3	6
Norman Borge	Bob Brophy	1	14
17. Raymond Burcham	Frank Ashley	1	11
18. Joe Cafisio	Sam Cafisio	0	12
19. Dean Drummer	Charles Elliott	1	4
20. Jeff Melanson	Norman Madeau	0	13
21. Ronald Cuartarone	Frank Bateman	0	2
22. Joe Pollilli	Paul Rivet	0	6
23. Joe Cacciatore	Ray Goodwin	2	6
24.			
25.			
TOTALS	16	12 geese	129 shots

Key

A. - Canada Geese	D - Green-winged Teal	C - Widgeon	J - Merganser, RB
B - Black Duck	E - Blue-winged Teal	H - Shoveler	K - Merganser, Hooded
C - Mallard	F - Pintail	I - Merganser,	L - Other

AM.

No. shots per bird 10.75      No. shots per hunter 8.06No. birds per hunter .75

## 1971 Youth Waterfowl Hunting Program

Date October 30, 1971

<u>Student</u>	<u>Instructor</u>	<u>No. and Species Killed (See Key)</u>	<u>No Shots Fired</u>
1. Charles Bisbee	Tom Brophy	2	3
2.			
3.			
4. Richard Hardy	Father	0	9
5. Greg Gange	Walter Fredericks	1	9
6. Ernie Sullivan	Robert McIntosh	0	1
7. Steven David	Lonny Brockelbank	1	10
8.			
9. Gary Winchell	Chet Nemphos	1	5
10. David Lacroix	Joe Frechette	0	13
11. Domenic Ciofalo	George Peters	2	11
12. Nelson Buswell	James Bateman	0	3
13. Joseph Frugoli	Francis Frugoli	1	9
14. Steven Benway	Stanley Banievwicz	0	13
15. Deborah Midgley	Mrs. Peter DeSarro	0	22
16. Pater A. DeSarro III	Pater A. DeSarro II	2	25
17. Michael Tymon	Charles Rawson	0	17
18. Ronald Soper	Robert Soper	0	16
19. Michael Ferrecchia	Roy Root	1	9
20.			
21. Paul Balukas	John Curtin	0	20
22. Paul Pierce	Mike Friend	0	14
23. Dave Cochran	Fred Gorman	1	19
24. Mike Caudreau	Jack L'Hommedieu	0	10
25.			
TOTALS	20	12 geese	238 shots

Key

A. - Canada Geese	D - Green-winged Teal	C - Widgeon	J - Merganser, RB
B - Black Duck	E - Blue-winged Teal	H - Shoveler	K - Merganser, Hooded
C - Mallard	F - Pintail	I - Merganser,	L - Other

AM.

No. shots per bird 19.6 No. shots per hunter 11.75No. birds per hunter .6

## 1971 Youth Waterfowl Hunting Program

Date November 6, 1971

<u>Student</u>	<u>Instructor</u>	<u>No. and Species Killed (See Key)</u>	<u>No Shots Fired</u>
1. William Elliott	Eugene Elliott	0	25
2. Scott Hefler	Ralph Hefler	0	25
3.			
4. Charles Porter	John Gauron	0	7
5. Joseph Grace Jr.	Joseph Grace	1	15
6. Mike Soraghan	Dennison Peel	1	18
7. Richard Sheppard	Mrs. Peter DeSarro	0	18
8. Mike Tirrell	George Smith	2	14
9. Mike Jacoby	Bart Morse	0	18
10. Tom White	Joe Clements	0	18
11. John Dube	Julius Contreas	0	21
12. Robert Joseph	Sam Caficio	2	13
13. Richard Mills	Norman Cleveland	2	12
14. Pete Lucier	Arthur Hembro	1	16
15. Dave Kaye	Norris Rogers	0	2
16. James Black	Robert Prescott	1	16
17. Dave Kenerson	Harry Kenerson	2	20
18. Richard Johnson	Charles Sioman	0	11
19. Timothy Hefferan	Godfrey Flagg	3	11
20. Roland Nadeau	John Cleveland	0	14
21. David Zeigler	Pete DeSarro	1	17
22. Claire Edwards	Russ Stearns	1	16
23. Robert Campbell	Robert Woodman	0	5
24. Dan Forte	George Rembis	0	6
25. Glenn Laffy	Victor Wishneusky	2	25
TOTALS	24	19 geese	363 shots

Key

A. - Canada Geese	D - Green-winged Teal	C - Widgeon	J - Merganser, RB
B - Black Duck	E - Blue-winged Teal	H - Shoveler	K - Merganser, Hooded
C - Mallard	F - Pintail	I - Merganser,	L - Other

AM.

No. shots per bird 19.1No. shots per hunter 15.1No. birds per hunter .79



1965 - 1971 Young Waterfowlers Hunt Data

Year	No. of Hunts	No. of Hunters	No. of Birds Killed	No. of Shots Fired	Birds/ Hunter	Shots/ Hunter	Shots/ Bird
1965	2	65	158	-	2.43	-	-
1966	4	30	70	-	2.33	-	-
1967	4	93	212	-	2.17	-	-
1968 (50 shell limit )	6	155	181	3,122	1.16	20.1	17.02
1969 (25 shell limit )	3	50	106	1,098	2.12	2.19	10.35
1970 (25 shell limit)	3	70	107	1,297	1.53	18.5	12.
1971 (25 shell limit)	4	83	67	966	.81	11.6	14.4

## INSTRUCTIONS FOR YOUTH HUNTERS AND INSTRUCTORS

1. Each youth hunter is limited to twenty-five shells for the day. You may not take more than this into the blind.
2. Legal shooting time begins at                      A.M.    and ends  
at                      P.M.      High tide is at
3. Youth hunters and their instructors are not permitted to leave their blinds during the hunt except to retrieve downed birds. Once you leave your blind you must leave the area and may not return to hunt again.
4. One exception to #3 above will be permitted. That is, if a blind which has had better hunting than yours is vacated by the occupants who are finished hunting you may move to that better blind to improve your chances.
5. Only the youth hunter may fire the gun. THE INSTRUCTOR IS NOT PERMITTED TO FIRE THE GUN UNDER ANY CIRCUMSTANCES. No exception to this rule will be tolerated as it is a violation of the federal regulations.
6. Students are expected to pick up their empty brass from the blind and other debris when they are through hunting. USE THE LITTER BAG PROVIDED PLEASE BE CONSIDERATE AND LEAVE A CLEAN BLIND AND AREA FOR THE NEXT HUNTER.
7. When you are through hunting the youth hunter is required to check out at the main gate and inform the refuge officer the number and species of birds he has killed and the number of shells he has fired.
8. Remember, a good killing range is 30-45 yards for a full choke gun. SKYBUSTING WILL NOT BE TOLERATED.

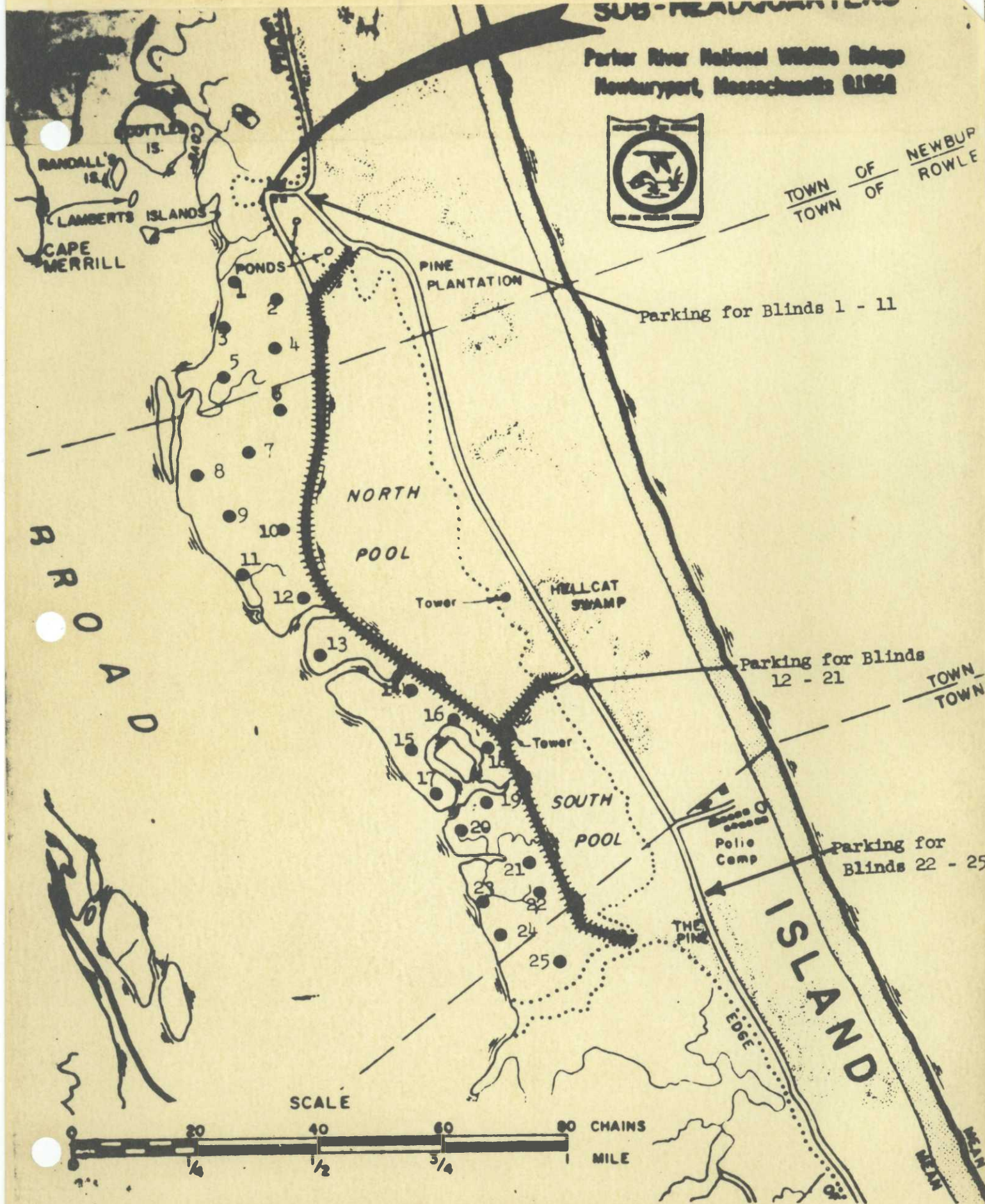
Remember: your fellow hunter may get a better shot at the ones you pass up. Good Luck!

SUB-HEADQUARTERS

Parker River National Wildlife Refuge  
Newburyport, Massachusetts 01860



TOWN OF NEWBURYPORT  
TOWN OF ROWLEY



Young Waterfowlers Hunting Area - showing blind locations.



This area received less pressure than the other two as indicated by fewer permit requests. This fact and its location between the other two areas (see map) contributed to the low success. None of the areas received as much pressure as usual in the early (goose only) part of the season. Pressure was high during the first 3 weeks of the coastal duck season, tapering off for the Christmas and New Year holiday weekends.

One death occurred during the hunting season. Mr. Michael Listorti, 58, of Everett, Mass. suffered a heart attack while walking out to hunt on Area C on Dec. 4. Mr. Listorti died later in the morning at Anna Jaques Hospital in Newburyport despite receiving oxygen and prompt assistance by the Newbury police who were summoned by R.M.A. Grover from the police radio in his refuge patrol vehicle.

2. The Youth Waterfowlers Training Program Hunt was conducted for the seventh year in a special area between the North and South pools and Broad Sound.

One all day Youth Waterfowlers Training session was held Sept. 26 at the Danvers Fish and Game Club with 100 young trainees and 50 new instructors present. The format of the program remained the same as in past years with various segments taught and/or handled by Bureau, State, and Sportsmen's Club members respectively. Information sheets on the four individual hunts held Oct. 23, 25, 30 and Nov. 6 follow. Due to the Nov. 23 opening date of the coastal duck season, all four hunts were limited to Canada geese and brant only.

#### E. Violations:

On May 1, 1971 Maintenance man Donald Grover was assigned to full time law enforcement duties as a result of an ever increasing law enforcement work load which was being handled primarily by the Refuge Manager and requiring an inordinate amount of his time.

Federal violations were processed through Commissioners Court in Boston. Several are still pending. The majority of our violations were processed through state district courts, prosecuted by local police departments or in the case of game law violations, prosecuted by state natural resources officers. Excellent cooperation was received from Newbury Police Chief Daniel Orfant throughout the year in the form of cooperative night patrols of the refuge, use of a police radio installed in a refuge patrol vehicle and the processing of public use violations (which were also violations of state law) through state court. In all state court prosecutions, refuge personnel appeared in court, testifying as witnesses.

LAW ENFORCEMENT ACTIVITIES

Parker River N. W. Refuge

Year 1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Neil A. Sampson Joseph A. Roy	20 44	11/7/70	Hunting in closed season	Grover	Newburyport	\$20 fine each and lisencc suspended for one year
Joseph P. Keefe	31	11/28/70	Late shooting	Grover	Ipswich Standish	\$25 fine and lisencc suspended for one year
Bruce Stott John Plummer	19 19	12/19/70	Late shooting	Moses	Newburyport Kelleher	\$10 fine each and suspended lisencc
James Norris	42	1/11/71	Hunting black ducks during closed season Over bag limit on scaup.	Grover	Newburyport	\$20 fine
Dawson Herbert Lawrence	22	5/18/71	Vehicle violation unregistered, uninspected, uninsured V.W. bus.	Moses	Newburyport Espovich	Fines totalling \$150
John W. Parsons Robert Duff Stelle II	21 24	6/27/71	Possession of marijuana	Grover	Newburyport Kelleher	Six months probation
Alexis Swan Jeffrey Clark Wallace	22 17	6/19/71	Possession of narcotics	Grover	Newburyport	\$100 each cost of court

LAW ENFORCEMENT ACTIVITIES

Parker River N.W. Refuge

Year 1971

(1) Defendant	(2) Age	(3) Date of Violation	(4) Offense	(5) Officers	(6) Court & Judge	(7) Court Results
Michael Patrick Murphy	18	4/4/71	Possession of marijuana.	Orfant	Newburyport Kelleher	Murphy - \$275 fine
John Allen Didlake	18		Operating a motor- cycle in the Research Natural Area.	Emerson Moses Grover		Didlake - \$125 fine
Richard Hamblen	33	5/11/71	Larceny - B & E--auto.	Georgetown Police Grover	Newburyport Kelleher	\$150 each cost of court
John Lambert	26					
Gary DePalma	18	5/15/71	Possession of alcoholic beverages.	Grover	Newburyport Kelleher	\$25 each cost of court
Michael Frederick Brown	18					
Francis Capuano	18					
Michal Cogan	18					
Robert Jackson	17	5/17/71	Minors in posses- sion of alcoholic beverages.	Grover	Newburyport Espovich	Jackson - \$25 fine
John Steven McGrillis	17					McGrillis - \$35 fine
William Edward Lannon	18	6/8/71	Possession of narcotics	Grover Orfant	Newburyport Espovich	\$125 each cost of court continued of one year
David K. Skerrett	18		Possession of alcohol			
Hartley E. Greenleaf	18					

## LAW ENFORCEMENT ACTIVITIES

Parker River N. w. Refuge

Year 1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
David Michael Smith	16	6/11/71	Possession of narcotics and alcoholic bev's.	Newbury police Moses	Newburyport	Continued of one year without finding \$100 each cost of court
Robert James Gagalis	16					
Heather Chadwick Roop	15					
Rebecca Elizabeth Fish	15					
Michael Abramson	16	6/4/61	Possession of narcotics, being knowingly present	Newbury police Moses	Newburyport Espovich	Continued for one year without finding \$100 each cost of court
Sabra Whalon	16					
Myra Wisotzsky	16					
Lorie Cahn	14					
Michael Benjamin Sussman	17					
David William Tannheimer	18					
Daniel Ira Small	17					
Janet Foulkes	16					
Arthur McLeod	16					
John Richard Winter	17					
Laraine Joyce Prasinos	18					

LAW ENFORCEMENT ACTIVITIES

Parker River N. W. Refuge

Year 1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Murray Russell Foster	25	7/18/71	Indecent exposure and possession of narcotics	Grover	Newburyport Espovich	Both guilty of indecent exposure - \$50 fines
James Douglas Loftus	27					Loftus also guilty of narcotics charges \$100 cost of clurt
David William Linger	22	7/4/71	Indecent exposure	Grover	Newburyport Espovich	Continued for one year \$25 cost of court
Ronald Neat Edelman	27					
Richard Arthur Boisvert	24	7/4/71	Possession of stolen motor-cycle	Grover	Newburyport Kelleher	Fined \$55.
Edward Welch		8/7/71	Assault with the intent to rape	Moses Grover Newbury police	Newburyport	Guilty of reduced charge of assault fined \$500.
3 individuals		10/25/71	Tresspass-hunting on refuge without a permit. Shooting from a motorboat	Grover		Pending U.S. Commissioners court
1 individual		10/27/71	Hunting without a liscense	Moses		

LAW ENFORCEMENT ACTIVITIES

Parker River N. W. Refuge

Year 1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
William Mahoney	19	8/14/71	Possession of narcotics & pyrotechnic devices.	Grover Newbury police	Newburyport Espovich	Guilty - \$100 each cost of court one year probation
Richard M. Peterson	23					
William Bennell	17					
John Peter Giangrogorio	17					
Stephen Torrice	18					
Armand Michaud	22					
Edmond Francis Burke	21					
Robert McKillop	19					
John Speziale	17					
Mark James Guy	19					
James John O'Rourke	19					
Mark Edward Smith	19					
James Francis Rideout	20					
Francis Xavier Devasto	19					
Joseph John Mause Jr.	18					



LAW ENFORCEMENT ACTIVITIES

Parker River N. W. Refuge

Year 1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Alfred Charles Andriolo Jr.	19	Continued from previous page.				
Catherine Ann Ludwig	21					
Patricia Speziale	20					
Thomas Edward Collins	19					
Peter Frederick Larsen	17					
Denise Paula Ganot	18					
Dale Franklin Gunsalus	20	8/12/71	Indecent exposure	Grover	Newburyport Kelleher	Fined - \$50 each
Mario Bellino	20					
Gary Lee Milsark	24	8/3/71	Indecent exposure	Grover	Newburyport Kelleher	Fined - \$50 each
Nomi Birdsong	24					
Dorothy Seigel	24					
Janet May Egan	18	7/18/71	Possession of narcotics	Grover	Newburyport Espovich	Continued for one year
Elizabeth Frances Izzi	18					Izzi & Croteau paid \$100 each, cost of court
John Bruce Cyr	18					
Dennis Croteau	18					

LAW ENFORCEMENT ACTIVITIES

Parker River N. W. Refuge

Year 1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Robert Burns Collier	26	9/18/71	Uninsured, uninspected, motor vehicle plates attached with string.	Grover Orfant	Newburyport Espovich	Defaulted - forfeited \$160 bail
McInerney, Michael C.	19	9/5/71	Minors in pos- session of alcohol.	Grover McBurnie	Newburyport Espovich	\$25 each - cost of court
Dennis C. Popp	20					
Sally Thompson	15					
Patricia Mc Inerney	17					
Stephen C. Gaska	20	8/28/71	Minors in pos- session of alcohol	Grover	Newburyport Espovich	\$25 each
Madelyn Cascone	20					
Brian R. Fleming	20					
James Timothy Lawrence	19	8/22/71	Possession of marijuana	Grover Newbury police	Newburyport Espovich	Continued for one year \$100 cost of court
Lee John Robison	19					
Scott Paul Robinson	23					

# LAW ENFORCEMENT ACTIVITIES

Parker River N. W. Refuge

Year 1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Peter Michael Brown	20	10/11/71	Possession of alcohol	Woodriff Newbury officer-Michael Bulgaris	Newburyport Kelleher	1 year probation for the men Miss Sylvester-default
Robert Abrahams	17					
Henry Lee Wilson	15					
Ina Jean Sylvester	16					
Mary Moynihan Gordon	21	9/18/71	Possession of Marijuana	Grover Newbury officers-Curra MacBunnie	Newburyport Leboeuf	Cassell - one year suspended sentence Others not guilty
Ann Francis Moyihan	17					
John Charles Coltin	26					
Ronald Eugene Cassell	23					
James Edward Allen	20	9/12/71	Possession of marijuana	Grover Bulgaris - Newbury police	Newburyport Kelleher	one year probation
Stephen Richard Agocs	19					
Robert Edward Harris	27					
Iann Michael Lawson	23	10/8/71	Indecent exposure	Grover	Newburyport Espovich	Lawson fined \$50
Okazaki						Okazaki -
Harry Thurlow	52	10/23/71	Assault and battery on a police officer, resisting arrest, unmarked shellfish, poss. of seed clams	Grover Folger	Newburyport Espovich	\$50 fine assault and battery. \$50 fine possession of seed clams not guilty on charges of resisting arrest & untagged shellfish

LAW ENFORCEMENT ACTIVITIES

Parker River N. W. Refuge

Year 1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
2 individuals		10/30/71	Hunting ducks - closed season	Moses		Official state warning
1 individual		10/17/71	Tresspass - running dog in closed area	Grover		Warning
3 individuals		10/23/71	Possession of narcotics	Grover	Newburyport Kelleher	Guilty - one year probation.
1 individual		11/27/71	Killing and pos- sessing protected species	Moses	State	
7 individuals		12/1/71	Hunting violations			State warnings
2 individuals		12/4/71	Shooting under power			
2 individuals		12/6/71	Operating motor- cycle through dunes.	Moses	U.S. Magistrate	
1 individual		12/7/71	a. Loaded gun in motorboat b. Taking ducks with unplugged shotgun.	Moses		

## LAW ENFORCEMENT ACTIVITIES

Parker River N. W. Refuge

Year 1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 individual		12/10/71	a. Attempting to kill protected species b. Hunting water- fowl with unplugged shot- gun.	Moses		
5 individuals		10/11/71	Minors in pos- session of alcohol	Newbury police	Newburyport Espovich 10/29 Kelleher	3 defaulted - 2 given one year probation.
1 individual		10/16/71	Possession of narcotics			
1 individual		11/12/71	Hunting - closed season			State warning
2 individuals		11/13/71	Hunting - closed season			State warning
4 individuals		11/20/71	Minors in pos- session of alcohol			
3 individuals		11/23/71	Early shooting	Grover	State court	
4 individuals		11/23/71	Over bag limit black ducks.	Moses	State court	

LAW ENFORCEMENT ACTIVITIES

Parker River N. W. Refuge

Year 1971

(1)	(2)	(3)	(4)	(5)	(6)	(7)
2 individuals		11/23/71	Possession of protected species	Woodruff	state court	
5 individuals		11/24/71	Hunting - trespass into closed area.	Grover	state court	
1 individual		11/25/71	Loaded gun in motor vehicle	Moses	Newburyport Dist. court	\$25 fine and loss of privileges.
Antonio DeMinico		11/25/71	a. Alien in possession of firearm b. Possession of hunting license when obtained by false state. c. Alien in country illegally.	Moses N.R.D. Marble U.S. Immigration office Holliday.	Newburyport Kelleher	Firearm permanently seized and destroyed by state a. guilty (plea guilty) b. guilty (plea not guilty) c. U.S. Immigration charges 1 & 2 forfeited in lieu of fact that individual was being turned over Immigration Service for deportation.
2 individuals		11/25/71	Hunting on Refuge	Moses		Pending in U.S. court
2 individuals		11/27/71	Hunting - trespass into closed area	Moses	Pending in U.S. magistrates court	
1 individual		11/27/71	loaded gun in motor vehicle	Moses	To be scheduled in state court	



Drug abuse was a major problem during 1971 with 69 people apprehended for possession and/or use of drugs. Twenty-one of these were in one group. Drug use was not limited to youthful refuge visitors. Although the majority of offenders were young people, a substantial portion were over 35.

A rise in the number of people apprehended for indecent exposure was partially attributed to some unwanted publicity from one of the Boston television stations. A talk show host interviewed a group of nudists who said the Parker River Refuge on Plum Island was one of their favorite spots for frolicking in the buff. Subsequently our problems in this area increased. Increase in problems such as this and the rise in drug offenses reflect the changing moral views of our young people.

On August 5 a Mrs. Mary C. Williams reported an attempted rape. A suspect, Edward A. Welch was subsequently apprehended by Don Grover and Mgr. Moses. On a fact to face confrontation she identified him as her attacker, and he was arrested on a charge of assault with intent to rape. Welch was brought to trial on Dec. 8, 1971 in Newburyport District Court and found guilty on a reduced charge of assault. Judge Norman Espovich fined him \$500.

Vehicle breakins continued to be a problem during 1971 with an estimated property loss total of \$7,000. Items stolen included wallets, spotting scopes, and photographer equipment. Several people were apprehended in connection with thefts and through refuge law enforcement activities over 75% of the stolen items were recovered. Four of these were juveniles ages 12, 12, 10, and 8 who admitted going through cars in parking lots 1, 2, and 3 on April 24, 1971. Three minors believed responsible for 16 breakins are presently under investigation. In addition, one stolen car was brought to the refuge and burned on July 16. (See photo section.)

#### F. Safety.

1. Twelve safety meetings were held during the year in addition to specific job safety discussions on a daily basis. Topics covered in the meetings included safe driving techniques, boating safety, accident prevention, fire prevention, safe operation of equipment, and others.
2. No lost time accidents occurred during 1971.

Refuge Manager Moses broke his right ankle on June 6 while descending from the 80<sup>0</sup> Lighthouse stairway where he was photographing high use of the north end of Plum Island.

A slight explosion occurred in the oxygen chamber of an oxygen-acetylene welder operated by Foreman Stubbs. No one was injured. The faulty mixing chamber valve which caused the accident was replaced, and safety valves were installed to prevent a recurrence.

3. The following measures were taken to prevent accidents:
  - a. Regular safety checks were made on vehicles and buildings.
  - b. Continual reminders were made on the importance of safety.
  - c. The slides series "Perception of Driving Hazards" was shown and comments made about the hazards shown and accident prevention.
  - d. The station safety committee reviewed each accident and near miss.
4. Future safety plans continue to call for monthly safety meetings and periodic building and vehicle safety checks, as well as emphasis to all personnel on the importance of maintaining safe work habits and conditions.

## VII. Other Items

A. Items of Interest.

1. Maintenance man Irvine Walker, who had suffered a heart attack Nov. 20, 1970, returned to work on May 25, 1971.
2. Three field trials were held at the refuge during the year by the Colonial Retriever Field Trial Club. The April trial had 45 entries and an estimated 500 spectators. Forty-five dogs and 35 handlers participated in the Aug. 22nd trial before a gallery of 125 people. The annual AKC registered trial was held by the club Oct. 1, 2, and 3. During the 3 day period 89 entries appeared before an estimated 460 spectators.
3. Miss Grace Christy entered on duty June 28, 1971 as a wildlife biologist. Her duties consisted of those of a public use specialist with measurement of public use, interpreting nature trails, preparing hand-out literature, and operation of the environmental education program, PREP, her primary responsibilities.
4. Bill Forward conducted one defensive driving course for 19 region 5 employees at the John F. Kennedy Federal Building in Boston. He is a designated instructor for the N.S.C. Defensive Driving Course.
5. Manager Moses served for the third year as judge for the New England Duck Calling Contest held at the Topsfield Fair. A very poor contestant turn-out this year does not bode well for this same event being held next year. "Quack"!!
6. Training sessions were attended as follows:

<u>Title</u>	<u>Place</u>	<u>Participants</u>	<u>Date</u>
Systems Approach Workshop	Bombay Hook N.W. Refuge	Moses	3/8-12
Payroll Training Session	J.F.K. Building	Stubbs	4/16
Law Enforcement Meeting	Montezuma N. W. Refuge	Stubbs	4/20-23
Systems Work Shop	Parker River	Moses Forward Stubbs	4/27 & 28
NSC Defensive Course	J.F.K. Building	Forward Christy & temporary personnel	8/5

<u>Title</u>	<u>Place</u>	<u>Participants</u>	<u>Date</u>
Focus Outdoors	U. Mass.	Christy	8/6, 7 & 8
Systems Planning Session	Hotel Madison Boston	Moses Stubbs Welch	10/5 - 10/8 10/7 & 8
Effective Writing Seminar	JFK Bldg., Boston	Forward	12/13- 15

7. Maintenance man De Serres attended a course in electrical welding held at the Haverhill Trade School, Haverhill, Mass. on his own time.
8. Manager Moses and Biologist Forward are members of the ECOP (ECology Programs) Planning Committee, a group of local educators and biologists. Manager Moses coordinated a nuclear panel discussion planned by ECOP as one of the Ecology in Action programs given by Essex County Extension Agent Ralph Goodno (see course schedule in photo section). Need for this discussion was generated by plans of the Middlesex Essex Power Pool to do a feasibility study for a nuclear electric generating plant that would destroy refuge marshland in the process of installing underground two parallel 18' diameter cooling water intake and discharge lines. These lines were proposed to be 4.5 miles long and bisect the refuge to get to offshore ocean water.
9. During the month of July, Refuge Manager Moses and family took a busman's holiday and visited region III refuges on their trip as far west as Nebraska. Refuges visited included, Chautauqua, Swan Lake, Squaw Creek, Desoto, Valentine, Fort Niobrara, Union Slough and Ottawa in that order.

10. Credits:

Sections I, II, IV, and V	Bill Forward
Section III	Tom Stubbs
Sections VI and VII	Grace Christy
Photos and editing	Ed Moses
Typing	Catherine Welch and Linda Kipp

B. Photo Section.

Appended.

Reviewed by:

*Howard Wilson*  
Regional Ref. *Wilson*  
Signature Supervisor Date

Submitted by:

*William R. Howard* *4/18/72*  
Signature Date  
*Acting Refugee Mgr.*

NR's Checked in R.O. by \_\_\_\_\_



3-1750  
Form NR-  
(Rev. March 1953)

W A T E R F O W L

REFUGE Parker River N. H.

MONTHS OF Jan. TO April, 19 71

(1) Species	(2) Weeks of reporting period									
	1/1-7 1	8-14 2	15-21 3	22-28 4	29-2/4 5	5-11 6	12-18 7	19-25 8	26-4/4 9	5-11 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	400	200	200	100	100	50	50	100	500	800
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	20	20	20	10	10	10	10	20	30	40
Black	1,000	1,000	1,000	1,000	200	200	200	500	800	1,000
Gadwall										
Baldpate										
Pintail										10
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:										

3-1750a  
 Cont. NR-1  
 (Rev. March 1953)  
 5RF - 4/68

WATERFOWL  
 (Continuation Sheet)

REFUGE Parker River N. W.

MONTHS OF Jan. TO April, 19 71

(1) Species	(2) Weeks of reporting period								(3) Estimated	(4) Production
	12 - 18	19 - 25	26 - 4/1	2 - 8	9 - 15	16 - 22	23 - 29	30	waterfowl	Broods
	11	12	13	14	15	16	17	18	days use	seen
Swans:										Total
Whistling										
Trumpeter										
Geese:										
Canada	1,500	3,500	4,500	4,500	3,000	1,500	800	500	153,100	
Cackling										
Bran		25	25						350	
White-fronted										
Snow		5	5	5	5	75	75	15	1,205	
Blue		2	2	2	2	2	2	2	86	
Other										
Ducks:										
Mallard	60	100	120	100	100	60	60	60	5,590	
Black	2,000	3,500	5,000	4,000	2,500	2,000	900	600	188,200	
Gadwall										
Baldpate	20	100	100	150	50	20	-	-	3,080	
Pintail	30	200	300	400	1,200	300	50	20	17,450	
GW teal	30	400	400	700	900	1,000	600	500	28,710	
BW teal		30	40	100	300	500	500	300	10,590	
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked		10	10	20	20	10	-	-	490	
Canvasback										
Scaup					10	10	10	-	210	
Goldeneye	50	50	30	30	20	20	10	10	1,480	
Bufflehead	50	50	20	50	40	40	30	30	1,990	
Ruddy					10	10	10	10	220	
Other										
Coot:				10	20	30	40	40	740	

(over)

NR-1

Cont. From

Jan.

to April

1971

	(5)	:	(6)	:	(7)
	Total Days Use	:	Peak Number	:	Total Production
Swans		:		:	
Geese	154,741	:	4,532	:	
Ducks	258,010	:	6,020	:	
Coots	740	:	40	:	

SUMMARY

Principal feeding areas Tidal salt marsh and mud flats,  
also fresh water pools when open.

Principal nesting areas Upland areas, islands, muskrat  
houses and fresh pool margins.

Reported by W R Forward

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

- (1) Species: In addition to the birds listed on form, other species occurring on the refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).



3-1750  
Form NR-  
(Rev. March 1953)

W A T E R F O W L

REFUGE Parker River N. W.

MONTHS OF May TO August, 19 71

(1) Species	(2) Weeks of reporting period									
	5/1 - 7 1	8 - 14 2	15 - 21 3	22 - 28 4	29 - 6/4 5	5 - 11 6	12 - 18 7	19 - 25 8	26 - 7/2 9	3 - 9 10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	200	100	120	130	130	140	150	150	150	150
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	80	60	50	70	80	100	150	150	150	170
Black	500	200	150	150	200	250	300	300	300	350
Gadwall	20	30	30	30	30	30	30	30	30	30
Baldpate										
Pintail	10	10	20	20	20	20	30	30	30	30
Green-winged teal	50	30	30	30	30	30	60	100	100	100
Blue-winged teal	80	60	40	50	50	50	50	60	60	80
Cinnamon teal										
Shoveler	10	5	5	5	5	5	5	5	5	5
Wood					10	30	70	100	100	100
Redhead										
Ring-necked										
Canvasback										
Scaup					5	5	5	5	5	5
Goldeneye										
Bufflehead	10									
Ruddy	5	5	10	10	10	10	10	10	10	10
Other										
Coot:	20	30	40	40	40	40	50	60	60	100

NR-1 From May to August, 19 71

3-1750a  
Cont. NR-1  
(Rev. March 1953)  
5RF - 4/68

WATERFOWL  
(Continuation Sheet)

REFUGE **Parker River N. W.**

MONTHS OF **May** TO **August** , 19 **71**

(1) Species	(2) Weeks of reporting period								(3)	(4)	
	7/10 - 16 17 - 23 24 - 30 31 - 6 7 - 13 14 - 20 21 - 27 28 - 31								Estimated	Production	
	11	12	13	14	15	16	17	18	waterfowl days use	Broods seen	Estimated Total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	150	150	170	170	200	200	250	250	19,970	18	80
Cackling											
Bran											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	180	200	230	230	250	250	300	300	20,030	10	140
Black	350	400	450	450	500	500	800	800	46,250	12	160
Gadwall	30	30	50	50	70	100	100	100	5,440	5	70
Baldpate							50	50	550		
Pintail	40	40	50	50	50	50	50	50	4,050	3	30
GW teal	100	120	130	140	150	150	250	300	12,400	2	30
BW teal	100	120	150	170	250	250	500	600	17,240	8	120
Cinnamon teal											
Shoveler	5	5	5	5	5	5	5	10	670		
Wood	100	100	100	80	70	60	50	50	6,990		
Redhead											
Ring-necked											
Canvasback											
Scaup	6	5	5	5	5	5	5	5	475		
Goldeneye											
Bufflehead									70		
Ruddy	10	10	10	10	10	10	10	10	1,160		
Other											
Coot:	130	150	150	200	200	200	200	200	12,770	10	150
(over) NR-1 Cont. From May to August 1971											



	(5)	:	(6)	:	(7)
	<u>Total Days Use</u>	:	<u>Peak Number</u>	:	<u>Total Production</u>
Swans		:		:	
Geese	<u>19,970</u>	:	<u>250</u>	:	<u>80</u>
Ducks	<u>115,325</u>	:	<u>2,275</u>	:	<u>550</u>
Coots	<u>12,770</u>	:	<u>200</u>	:	<u>150</u>

<u>SUMMARY</u>	
Principal feeding areas	<u>Entire refuge.</u>
Principal nesting areas	<u>Salt marsh edges, fresh water marshes and islands.</u>

Reported by W. R. Forward

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

- (1) Species: In addition to the birds listed on form, other species occurring on the refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).



WATERFOWL  
(Continuation Sheet)

MONTHS OF **Sept.** TO **Dec.** , 19 **71**

(1) Species	(2) Weeks of reporting period								(3) Estimated	(4) Production
	10 - 16	17 - 23	24 - 30	31 - 7	8 - 14	15 - 21	22 - 28	29 - 31	waterfowl	Broods: Estimated
	11	12	13	14	15	16	17	18	days use	seen : Total
<b>Swans:</b>										
Whistling										
Trumpeter										
<b>Geese:</b>										
Canada	4,000	3,000	3,000	1,000	1,000	1,000	600	500	238,100	
Cackling										
Brant										
White-fronted	10	10	10	10	10	5	5	5	792	
Snow										
Blue										
Other										
<b>Ducks:</b>										
Mallard	350	250	300	300	300	200	200	100	44,400	
Black	9,000	8,000	8,000	7,000	7,000	6,000	5,000	3,000	673,300	
Gadwall	50	25	25	20	20	20	10	10	7,450	
Baldpate	300	200	150	150	100	50	20	-	50,540	
Pintail	300	100	200	150	150	150	50	50	38,300	
GW teal	2,500	1,000	800	500	100	50	20	10	146,120	
BW teal	20	10	-	-	-	-	-	-	38,010	
Cinnamon teal										
Shoveler	50	50	10	-	-	-	-	-	6,020	
Wood									1,750	
Redhead										
Ring-necked										
Canvasback	50	50	50	20	20	10	10	10	3,495	
Scaup	50	50	50	50	50	50	50	50	3,300	
Goldeneye	50	50	50	50	50	50	50	50	4,420	
Bufflehead	50	40	30	30	20	20	-	-	4,060	
Ruddy	20	50	10	5					735	
Other										
<b>H. Merg.</b>										
<b>Coot:</b>	300	150	100	50	-	-	-	-	45,150	

(over) NR-1 Cont. From Sept. to Dec. 1971



	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	238,892	6,025	
Ducks	1,021,900	16,415	
Coots	45,150	1,000	

SUMMARY

Principal feeding areas Salt marshes, fresh pools, when open, mud flats.

Principal nesting areas Fresh water pools and margins

Reported by W. R. Forward

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

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- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1751  
Form NR  
(Aug. 1952)

M ATORY BIRDS  
(Other than Waterfowl)

Refuge Parker River N. W.

Months of Jan.

to April

19 71

(1)	(2)		(3)		(4)		(5)			(6)
Species	First Seen		Peak Concentration		Last Seen		Production			Total
Common Name	Number	Date	Number	Inclu- sive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<b>I. Water and Marsh Birds:</b>										
Great Blue Heron	1	3/31	5	4/29	3	4/30				150
Green Heron	2	4/10	5	4/30	2	4/30				75
Black-crowned Night Heron	1	4/9	25	4/30	5	4/30				750
American Bittern	1	4/9	1	4/25	1	4/25				60
<b>II. Shorebirds, Gulls and Terns:</b>										
Killdeer	1	3/17	2	4/15	2	4/30				450
Woodcock	1	3/15	1	3/15	1	3/15				60
Lesser Yellowlegs	1	3/29	10	4/20	5	4/30				600
Great Black-backed Gull	5	1/10	20	3/29	10	4/30				2000
Herring Gull	10	1/10	100	4/1	30	4/30				6000
Ring-billed Gull	2	1/	10	4/9	5	4/29				800

(over)

NR-1A From Jan.

to April

19 71

5RF-2/71



	(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>						
Mourning dove	2	4/1	10	4/28	5	4/20
White-winged dove						300
IV. <u>Predaceous Birds:</u>						
Golden eagle						
Duck hawk	1	3/24	1	4/3	1	4/3
Horned owl						9
Magpie						
Raven						
Crow	5	1/1	50	3/9	10	4/29
Goshawk	1	1/15	2	1/20	1	1/21
Sharp-shinned Hawk	1	1/15	1	1/15	1	2/28
Rough-legged Hawk	1	1/1	10	3/9	2	3/30
Merlin	1	4/25	1	4/25	1	4/25
Snowy Owl	1	1/1	3	2/28	1	3/23
Short-eared Owl	1	3/26	1	4/25	1	4/26

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

If more space is needed for listing species in Group I, you can X out heading for Group II and continue listing. Retype heading of Group II below, or list Group II on a second page. Here, too, if the list is long, you can X out both headings and retype heading for Group II at top of form. This can eliminate the necessity for a third page of form.

Explanation of column headings:

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- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-175J  
Form NR  
(Aug. 1952)

M ATORY BIRDS  
(Other than Waterfowl)

Refuge Parker River N. W.

Months of May to August 19 71

(1)	(2)		(3)		(4)		(5)			(6)
Species	First Seen		Peak Concentration		Last Seen		Production			Total
Common Name	Number	Date	Number	Inclu- sive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<b>I. Water and Marsh Birds:</b>										
Great Blue Heron	2	5/1	5	8/15	1	8/31				700
Green Heron	1	5/10	20	8/1	2	8/31				2,500
Little Blue Heron	1	5/20	1	8/17	1	8/17				60
Common Egret	1	6/1	10	8/25	1	8/31				700
Snowy Egret	1	5/5	375	8/22	10	8/31				8,000
Louisiana Heron	3	5/15	3	5/15	3	5/15				30
Black-Crowned Night Heron	2	5/1	100	7/1	5	8/31	1	50(est)	100	12,000
Least Bittern	1	6/9	10	7/15	2	8/15				900
American Bittern	1	5/1	5	6/15	1	8/15				1,800
Virginia Rail	1	5/10	50	8/15	2	8/31			100	3,000
Sora	1	5/15	10	8/20	1	8/31			50	1,500
Common Gallinule	2	5/10	150	8/15	10	8/31			200	3,500
<b>II. Shorebirds, Gulls and Terns:</b>										
Semi-palmated Plover	2	5/25	400	8/15	10	8/31				12,000
Killdeer	1	5/1	30	8/20	5	8/31				1,800
American Golden Plover	1	8/25	3	8/31	1	8/31				300
Black-bellied Plover	5	5/20	1,000	8/25	150	8/31				26,000
Whimbrel	1	6/3	15	8/10	2	8/15				450
Willet	1	5/7	1	5/7	1	5/7				10
Greater Yellowlegs	2	5/1	100	8/15	10	8/31				10,000
Lesser Yellowlegs	1	5/1	150	8/15	50	8/31				15,000
Pectoral Sandpiper	1	8/31	5	8/31	2	8/31				300
Least Sandpiper	10	5/10	2,500	8/25	500	8/31				30,000
Short-billed Dowitcher	5	5/25	1,000	7/20	100	8/31				14,000

(over)

NR-1A From May to August 19 71  
5RF-2/71

	(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:						
Mourning dove	70	2/70	5'200	9/52	200	20'000
White-winged dove	1	9/37	2	9/37	5	200
	1	2/7	120	9/72	20	12'000
	5	2/7	700	9/72	70	70'000
	1	2/1	7	2/1	7	70
	1	9/3	72	9/70	5	720
IV. Predaceous Birds:						
Golden eagle	1	2/30	1'000	9/52	720	5'000
Duck hawk	1	9/52	3	9/37	7	300
Horned owl	1	2/7	30	9/50	2	1'900
Magpie	5	2/52	700	9/72	70	15'000
Raven						
Crow						
	5	2/70	720	9/72	70	3'200
	1	2/72	70	9/50	7	1'200
	1	2/70	20	9/72	5	3'000

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

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- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751  
Form NR  
(Aug. 1952)

M. ATORY BIRDS  
(Other than Waterfowl)

Refuge Parker River N. W.

Months of **May** to **August** 19 **71**

(1)	(2)		(3)		(4)		(5)			(6)
Species	First Seen		Peak Concentration		Last Seen		Production			Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<b>I. <u>Water and Marsh Birds:</u></b>										
<b>II. <u>Shorebirds, Gulls and Terns:</u></b>										
Stilt Sandpiper	1	7/20	50	7/25	5	7/30				1,500
Semi-palmated Sandpiper	20	5/20	1,500	8/25	200	8/31				35,000
Sanderling	10	5/15	500	8/30	50	8/31				16,000
Great Black-backed Gull	5	5/1	120	8/30	10	8/31				7,000
Herring Gull	10	5/1	400	8/30	25	8/31				25,000
Ring-billed Gull	5	5/1	25	8/30	5	8/31				1,500
Common Tern	5	5/9	300	8/15	10	8/31	2	60 (est)	180	10,000
Least Tern	2	5/9	50	8/20	5	8/31				2,500
Black Tern	10	6/7	10	6/7	2	8/31				300

(over)

NR-1A From **May** to **August** 19 **71**

5RF-2/71







3-175  
Form NR-1A  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge Parker River N.W.R.

Months of September to December 19 71

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
	Number	Date	Number	Inclu- sive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<u>I. Water and Marsh Birds:</u>										
Common Loon	1	9/20	15	11/20	1	12/20				700
Red-throated Loon	1	10/1	5	11/30	1	12/25				200
Double-crested Cormorant	5	9/1	150	9/25	10	11/30				2,000
Great Blue Heron	2	9/1	10	9/30	1	11/20				600
Green Heron	5	9/1	40	9/25	2	11/1				1,000
Common Egret	3	9/1	20	9/20	1	10/30				400
Snowy Egret	25	9/1	200	9/5	5	11/10				4,500
Black-crowned Night Heron	15	9/1	70	9/15	1	11/20				1,500
Least Bittern	2	9/1	5	9/10	1	10/20				600
Common Bittern	1	9/1	10	10/20	1	12/15				900
Virginia Rail	2	9/1	50	9/15	1	10/20				1,800
Sora	1	9/1	30	9/15	1	10/15				1,400
Common Gallinule	10	9/1	150	9/10	5	10/15				3,500
<u>II. Shorebirds, Gulls and Terns:</u>										
Semipalmated Plover	5	9/1	50	9/20	2	10/20				4,000
Killdeer	10	9/1	25	9/20	2	12/15				900
American Golden Plover	5	9/10	30	9/10	5	10/10				300
Black-bellied Plover	10	9/1	450	9/15	2	10/30				7,000
Ruddy Turnstone	20	9/5	100	9/10	5	9/30				1,000
Whimbrel	5	9/1	10	9/25	2	10/10				100
Greater Yellowlegs	5	9/1	50	9/20	2	12/10				1,800
Lesser Yellowlegs	10	9/5	150	9/20	1	12/15				6,000
Pectoral Sandpiper	5	9/20	20	10/10	2	12/1				800
Baird's Sandpiper	1	9/10	1	9/20	1	9/20				20
Least Sandpiper	30	9/15	1200	10/1	10	10/10				14,000
(over)										

(1)	(2)	(3)	(4)	(5)	(6)		
III. <u>Doves and Pigeons:</u>							
Mourning dove	10	9/1	800	9/5	2	12/15	6,000
White-winged dove							
IV. <u>Predaceous Birds:</u>							
Golden eagle	1	11/1	1	11/3	1	11/5	10
Duck hawk	1	9/28	1	10/1	1	11/1	60
Horned owl							
Magpie							
Raven							
Crow	5	9/1	50	11/20	2	12/31	3,500
American Rough-legged Hawk	2	11/1	6	12/15	4	12/31	90
Marsh Hawk	2	9/1	10	10/15	2	12/31	250
Pigeon Hawk	1	10/20	2	10/25	1	10/30	60
Sparrow Hawk	1	9/1	10	10/10	2	12/31	400
Snowy Owl	1	11/15	4	12/15	2	12/31	120
Bald Eagle	1	11/22	1	11/22	1	11/22	7

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

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- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge du ig the reporting period.

3-175  
Form NR-1A  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge Parker River N.W.R.

Months of September to December 19 71

(1)	(2)		(3)	(4)		(5)			(6)	
Species	First Seen		Peak Concentration	Last Seen		Production			Total	
Common Name	Number	Date	Number	Inclu- sive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	70	3/7	500	75/7	10'000
White-winged dove	7	3/7	70	75/70	10'000
	7	3/7	7	75/70	70
	70	3/7	200	3/50	70'000
	2	3/7	72	3/70	200
IV. <u>Predaceous Birds:</u>	7	3/70	5	3/72	50
Golden eagle	30	3/50	1000	3/72	3'000
Duck hawk	5	3/7	50	3/70	7'500
Horned owl	70	3/7	20	3/2	7'000
Magpie	7	70/7	200	75/7	10'000
Raven					
Crow					

#### INSTRUCTIONS

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- (6) Total: Estimated species days use (average population X no. days present) of refuge du ig the reporting period.

3-175-  
Form NR-1A  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge Parker River N.W.R.

Months of September to December 1971

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclu- sive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										
II. <u>Shorebirds, Gulls and Terms:</u>										
Ring-billed Gull	2	9/2	20	11/15	1	12/15				1,000
Common Tern	20.	9/1	150	9/15	2	9/30				3,000
Least Tern	5	9/1	20	9/15	1	9/25				700
Black Tern	1	9/5	5	9/5	1	9/7				50
(over)										



(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove					
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow					

#### INSTRUCTIONS

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- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

Refuge **Parker River N. W.** For 12-month period ending August 31, 1971

Title **Wildlife Biologist**

(over)

## INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

- (1) **Area or Unit:** A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.
- (2) **Habitat:** Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.
- (3) **Use-days:** Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) **Breeding Population:** An estimate of the total breeding population of each category of birds for each area or unit.
- (5) **Production:** Estimated total number of young raised to flight age.



3-10 c  
Form NR-1C  
(Sept. 1960)

WATERFOWL HUNTER KILL SURVEY

Refuge Parker River N.W.R.

Year 1971

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species	(5) No. Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. Hunters	(9) Est. Total Kill	
9 1/2 weeks (40 days- ducks 69 days- geese)	375	1,400	<u>Regular Waterfowl Season</u> Ducks 11/23/71 - 1/1/72 Geese 10/20 - 11/11/71 11/23/71 - 1/8/72						
	Data derived from voluntary kill data sheets sup- plemented with spot checks and estimates.		Black Duck	321	*128	449	1,500	800	
			Canada Goose	144	58	202			
			Mallard	17	7	24			
			Green-winged Teal	17	7	24			
			Miscellaneous	40	16	56			
				539	215	755			
	4 days Oct. 23, 25, 30, & Nov. 6, 1971	83	664	<u>Young Waterfowlers Program</u> <u>Special</u> Canada Goose (only)	67	17	84	83	84
		Data exact derived from complete check			605	232	837	1583	884
				*We estimate a 40% crippling loss due to the unique nature of our hunting areas-- i.e. tidal salt marshes laced with creeks and ditches which render retrieval of some crippled birds very difficult and in some cases impossible. This plus a still considerable degree of sky busting contributes to the high crippling loss reported.					
TOTALS:									

Year 1971

INSTRUCTIONS

- (1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.
- (2) The goal is to survey a minimum of 25 per cent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 per cent goal cannot be achieved, particular care should be taken to collect representative data.
- (3) Record the total number of hours the hunters spend hunting on the refuge.
- (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Green-winged Teal (1).
- (5) Record total numbers of waterfowl bagged.
- (6) Record total numbers of waterfowl reported knocked down but not recovered.
- (7) Total of Columns 5 and 6.
- (8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).
- (9) Kill sample projected to 100 per cent.  $\text{Column 9} = \frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}.$

TOTALS



REPORT OF BANDING ON Parker River REFUGE - CALENDAR YEAR 1971

Geese	Method of Trapping*	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Canada								92						92
Brant														
Ducks														
Mallard		3	1					108	4					116
Black		45	44					190	495	157				931
Gr.-Winged Teal								4	1					5
Bl.-Winged Teal								36	13	7				56
Wood Duck								6	1					7
Black X Mallard		5	19						2					26
Pintail								2	2	4				8
Eider														
Total Waterfowl		53	64					438	518	168				1241
Other														
Mourning Dove	wire traps						42	470	912					1424
Woodcock														

Quotas: Canada geese -; Mallard -; Blacks 500; Other -

\*Method of Trapping: CAN - Cannon Net; CAGE - Cage; MIST - Mist Net; NITE - Night-lighting

3-175  
Form NR-2  
(April 1946)

UPLAND GAME BIRDS

Refuge Parker River N. W. Months of Jan. to April 19 71

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods observed	Estimated Total	per- centage	Hunting	For Re- stocking	For Research	Esti- mated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	1,000 acres of Dunes, brush and droplands 200 acres of fresh water marsh Total: 1,200	40	-	-	60:40	-	-	-	30	

3-175  
Form NR-2  
(April 1946)

# UPLAND GAME BIRDS

Refuge Parker River N. W. Months of May to August 19 71

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods observed	Estimated Total	per- centage	Hunting	For Re- stocking	For Research	Esti- mated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	1000 acres of dunes, brush and croplands. 200 acres of fresh water marsh. Total 1,200	10	5	90	50:50	-	-	-	120	

3-1752  
Form Nk  
(April 1946)

# UPLAND GAME BIRDS

Refuge Parker River N.W.R.

Months of September to December, 19 71

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks	
Common Name	Cover types, total acreage of habitat	Acre per Bird	Number broods obs'v'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge	Pertinent information not specificioally requested. List introductions here.
Ring-necked Pheasant	1,000 acres of dunes, brush and croplands. 200 acres of fresh- water marsh. Total 1,200.	17.1	- -	50:50	- - -	70	-



# INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.\*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\* Only columns applicable to the period covered should be used.



3-17c  
Form NR-3  
(June 1945)

BIG ME

Refuge Parker River N.W.R.

Calendar Year 1971

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number												
White-tailed Deer	1,000 acres of dunes, brush and croplands. 200 acres of fresh water marsh. Total 1,200.	2	-	-	-	-	-	-	-	-	-	8	4	50:50

Remarks:

Reported by \_\_\_\_\_

## INSTRUCTIONS

## Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116000

754  
Form NR-4  
(June 1945)

SMALL MAMMALS

Refuge Parker River N. W.

Year ending April 30, 1971

(1) Species	(2) Density	Removals						(4) Disposition of Furs					(5) Total Population	
Common Name	Cover Types and Total Acres of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	Restocking	For Research	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
								Permit Number	Trappers Share	Refuge Share				
Muskrat	Fresh Marsh-216 acres	54												400
Mink	Sand dunes & marsh	640												6
Otter	" " "	1920												2
Raccoon	" " "	480												8
Woodchuck	3840 acres													
	Sand dunes, brush &													
	croplands - 1,200 acres													
Striped Skunk	" " "	40												50
Red fox	" " "	85.7												30
Cottontail rabbit	" " "	6												14
														200

REMARKS:



## INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- | (1) SPECIES:            | Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)  |
|-------------------------|--|
| (2) DENSITY:            | Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks. |
| (3) REMOVALS:           | Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.   |
| (4) DISPOSITION OF FUR: | On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprime-ness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.   |
| (5) TOTAL POPULATION:   | Estimated total population of each species reported on as of April 30.   |
| REMARKS:                | Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.  |



3-17  
Form NR-8  
(Rev. Jan. 1956)  
5RF-10/64

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Parker River N. W.

County Essex

State Massachusetts

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
Winter Rye (Balboa					51		51	Winter Rye Browse	51
Hay					16		Planted	Timothy Viking Birdfoot Trefoil Empire Birdfoot *Browse	16
								Fallow Ag. Land	19

No. of Permittees: Agricultural Operations none Haying Operations one Grazing Operations none

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				86
Hay - Wild	25	25	25.00	2. Acreage Cultivated as Service Operation				86



DIRECTIONS FOR PREPARING FORM NR-8  
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or state.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.



3-1979 (NR-12)  
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge

Parker River N.W.R.

Proposal Number

Reporting Year

PR-71-1

1971

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Dates of Application (1)	List of Target Pests(s) (2)	Location of Area Treated (3)	Total Acres Treated (4)	Chemical(s) Used (5)	Total Amount of Chemical Applied (6)	Application Rate (7)	Carrier and Rate (8)	Method of Application (9)
7/3-10	Purple Loose-strife ( <u>Lythrum</u> <u>salicaria</u> )	Marginal sites in South Pool--inland edge and along dike.	12	Ammate-X (Ammonium sulfate)	570 lbs	57 lbs A.I. in 100 gals of water	Water-- up to 75 gals. per acre	Truck mounted pump with hand gun and garden sprayer

10. Summary of results (continue on reverse side, if necessary)

After some initial difficulties in getting equipment organized and obtaining proper spray nozzle, spraying commenced actively in early July on Purple Loosestrife at pre-emergence stage in margins and along dike edge of the South Pool. Results were quickly evident as stands of the plant treated changed color and died. An estimated total of 12 acres was treated and affected in the South Pool area and this program complemented nicely the treatment which followed in early August using flooding by salt water for control. It is hoped that future treatments of the marginal seed sources unreachable by salt water flooding measures will allow more complete control of this severe pest plant species.

Bureau of Sport Fisheries and Wildlife  
Division of Wildlife Refuges

**MONTHLY RECREATIONAL USE REPORT**

**ANNUAL RECREATIONAL USE REPORT --1971**

Refuge name

**Parker River N.W.R.**

State

**Massachusetts**

State

Code **21**

(1-2)

Congressional

District Code **09**

(3-4)

Refuge

Code **509**

(5-7)

Report Yr. | Mo.

Period **71**

(8-11)

(Card Columns). . . . . (12-13) (14-18) (19-25)			
ACTIVITY	Code	VISITS FOR THE MONTH	
		Total Number	Total Hours
Hunting: Big Game	01		
Upland Game	02		
Waterfowl	03	1,410	5,640
Other Migratory	04		
Other	05		
Bow	06		
Fishing: Salt Water	07	16,225	32,450
Warm Water	08		
Cold Water	09		
Environmental Education	10	90	540
Wildlife Photography	11	2,970	5,940
Wildlife Observation	12	38,800	64,500
Conducted Programs	13		
Field Trials	14	1,110	4,440
Wildlife Trails	15	14,750	14,750
Wildlife Tours/Routes	16	95,889	95,889
Visitor Contact Stations	17		
Camping (wildlife related)	18		
Picnicking (wildlife related)	19	11,000	5,500
Wildlife Interpretive Center	20		
Off-Site Programs	21	232,280	190

(Card Columns). . . . . (12-13) (14-18) (19-25)			
ACTIVITY	Code	VISITS FOR THE MONTH	
		Total Number	Total Hours
On-Site Programs	22	490	55
*Miscellaneous Wildlife	23	4,150	1,050
Swimming	24	23,000	23,000
Boating	25		
Water Skiing	26		
Camping	27		
Group Camping	28		
Picnicking	29	65,300	130,600
Horseback Riding	30		
Bicycling	31	4,500	4,500
Winter Sports	32		
Fruit, Nut and Vegetable Collecting	33	4,500	4,500
*Miscellaneous Non-Wildlife	34	22,850	22,850
Peak Load Day	35	4,000	
Actual Visits	36	244,916	
Fee Area Use	37		
Number of Fee Areas	38	(14-18) 100	
Fee Collections	39	\$ 44,378.72	
Collection Costs	40	\$ 5,747.00	





A small sampling of the items seized from drug users on the refuge this year. Film containers were widely used to contain marijuana and hashish.



We wish more of our summer users were coming to the refuge to appreciate wildlife as opposed to engaging in activities which resulted in the above seizures.





Biological Technician David Woodruff (on left) and Y.O.C. Floyd Maker contributed significantly to the regional banding effort. A total of 1149 ducks and 1404 doves were banded.



Our flightless goose drive yielded a total of 105 birds, 92 of which were not previously banded. Steve Doty Y.O.C. and the entire temporary staff thoroughly enjoyed this operation and the opportunity to "biologise" a little.



The self guiding Hellcat Swamp Nature Trail received several improvements with the construction of walkways to prevent dune erosion and the spreading of wood chips over all flat sandy areas.



The cerebral palsy victims and other special children attending camp Sea Haven put their special "fishing hole" in the North Pool to heavy use this summer. White Perch are the only species caught.





The large building in the left center of the photo is the field center for the Parker River Environmental Project. The entire complex is the summer camp for cerebral palsy victims and other physically incapacitated children operated under permit by United Cerebral Palsy of Greater Boston.

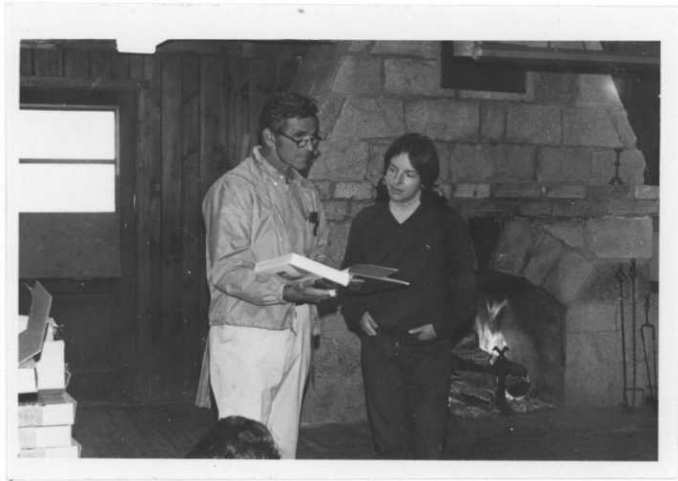


The building makes a fine area to conduct the indoor portions of the P.R.E.P. teacher workshops. Two workshops were held in 1971, one in May and the second in October.



The October session was covered by WADH-TV and a 15 minute showing occurred on the program "The Week Ends Here". Above: Ralph Goodno, Essex County Resource Development Specialist and Refuge Manager Moses are being interviewed. Below: Instructor Alan Railsback conducts a wrap up session of his "Transect" group after they have conducted their field activities.





Conservation Education Coordinator Bill Whalen made presentations of "Waterfowl of Tomorrow" or "Birds in Our Lives" to all teacher workshop course instructors, Ralph Goodno, Bill Forward, and Ed Moses.



A bluebird day on a Youth Waterfowl hunt. The dog seems to be more attentive to the skies than the youth or his advisor.



## PLANNING COMMITTEE

Joseph Balsama

Swampscott Public Schools

William Forward

Parker River National Wildlife Refuge

Frederick Gabriel

Holten-Richmond School, Danvers

Ralph H. Goodno

Cooperative Extension Service, Northeast  
Extension Region, Danvers

Belva Green

Rockport Conservation Commission

Robert Knights

Pentucket Regional High School

Susan Latham

Newburyport

Edward Moses, Director

Parker River National Wildlife Refuge

David Ryan

Pingree School, South Hamilton

Richard Short

Division of Conservation Education, Mass.  
Department of Education

Walter Thompson

Hamilton-Wenham Regional School

## November 9

### Panel — Environmental Law and Politics

- William L. Saltonstall  
Senator, Third Essex District
- Stephen Ells  
Chief Counsel to the Governor

## November 16

### Panel — Resource Planning

- Dr. Theodore S. Bacon Jr.  
Professor of Landscape Architecture, Uni-  
versity of Massachusetts
- Richard H. Young  
Executive Director, Merrimac Valley Plan-  
ning Commission

## November 30

### Panel — Ecology Projects for Students

- Raymond Gehling  
Division of Conservation Education  
Massachusetts Department of Education
- Jerome Lake  
Andover High School
- Richard Geesey  
Essex Agricultural and Technical Institute

## December 7

### Panel — Case Studies of Community Action

- Robert Ellis  
President, Massachusetts Association of  
Conservation Commissions
- Marion Stoddard  
President, Nashua River Watershed Assoc.

## December 14

### Panel — Proper Land Use Areas

- James Sheppard  
Director, Massachusetts Division of Fish-  
eries and Game
- John Noyes  
Professor of Forestry, University of Massa-  
chusetts
- Alden Cousins  
Massachusetts Department of Natural Re-  
sources, Division of Conservation Services

## January 4

### Panel — The Population Crisis

- Elizabeth Sweet  
Education Director, Greater Lawrence Zero  
Population Growth
- Thomas Cone  
Phillips Academy, Andover

## January 11

### Panel — Pesticides and Pollution

- Dr. Chester E. Cross  
Director at University of Massachusetts  
Cranberry Station
- Dr. Karl H. Deubert  
Cranberry Station Biochemist

## NOTES

- In case of inclement weather, please listen  
to Stations WBZ and WHDH for cancella-  
tion
- The policy evaluation is a lesson plan or  
resource project for classroom use within  
the subject area of the course prepared by  
the participant. The certificate grade will  
be based on this
- Students can withdraw from the course not  
later than the third lesson and obtain a  
full refund
- Be sure to wear suitable attire for field  
trips and boating excursions

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Issued by the Cooperative Extension Service,  
A. A. Spielman, Director, in furtherance of the  
Acts of May 8 and June 30, 1914; University of  
Massachusetts, United States Department of  
Agriculture and County Extension Service Co-  
operating.

## Seminar

# FIELD WORK IN ECOLOGY

Basic Units in

Environmental Education

For

Elementary and Secondary

School Teachers



FALL SEMESTER

1971-1972

Conducted by

- Cooperative Extension Service, University of  
Massachusetts, United States Department of  
Agriculture and County Extension Services  
Cooperating
- Essex Agricultural and Technical Institute
- Massachusetts Department of Education



SEMINAR

Field Work in Ecology

September 14, 1971 - January 11, 1972

Invitation

The Cooperative Extension Service and the Essex Agricultural and Technical Institute invites you to participate in a series of field trips, ecological surveys and panel discussions dealing with a broad spectrum of pressing environmental issues. Many of the sessions consist of outdoor lab experiences which can be adapted to environmental curricula. Panel discussions by leading specialists and resource professionals will provide realistic and timely analyses of current problems.

Location and Time of Sessions

All sessions will be conducted from 3:30 P.M. to 5:30 P.M. in Room 201 of the McNamara-O'Shea Science Building, Essex Agricultural and Technical Institute, Hathorne, Massachusetts. The only exceptions are three optional Saturday field trips on September 18, October 16, and November 6 which will start at 9 A.M. and conclude at 3 P.M.

Course Credit

There is no undergraduate or graduate credit offered for this course. Every effort will be made to encourage your school system to award credits to you for extra increments in salary. Certificates of achievement will be presented to participants attending a minimum of 13 sessions and completing the policy evaluation.

COURSE OUTLINE

September 14

Panel — Advocates for Environmental Action

- Dr. Carl Carlozzi  
Department of Forestry and Wildlife Management, University of Massachusetts
- Dallas Miner  
Assistant Editor of Conservation Service Center, Massachusetts Audubon Society

September 18 (Optional)

All day field trip — Ecological study of Plum Island, Parker River National Wildlife Refuge

- Robert Knights  
Pentucket Regional High School
- Harold Wiper  
Newton High School
- Alan Railsback  
Salsbury Memorial School
- Ligi Kelsey  
Belleville School, Newburyport

September 21

Field Trip — Pond and Woodland Transect Study

- Dave Townley
- Keith Thomas
- Edward Lang  
Staff members of Department of Environmental Technology, Essex Agricultural and Technical Institute

September 28

Field Survey — Analysis of a Community as a Basic Tool for Environmental Projects

- Ralph Goodno  
Cooperative Extension Service

October 5

Field Survey — Sampling Methods for Detecting Air Pollution

- Joseph Balsama  
Swampscott Public Schools

October 12

Field Trip — Western Electric Waste Water Treatment Plant, North Andover

- R. A. DeVincentis, Chief, Community Relations, Western Electric

October 16 (Optional)

All day field trip — Ecological and Recreational Study of Misery Island, Salem-Beverly Harbor

- David A. Ryan  
Pingree School, S. Hamilton

October 19

Work shop — The Role of Art in Environmental Science Curricula (A team-teaching approach)

- Susan Latham, Newburyport

October 26

Discussion — Private Conservation Organizations; Their Role in Environmental progress

- Speaker to be announced

November 2

Panel — The Pros and Cons of Nuclear Power Plants

- Saul Levine, Assistant Director, U. S. Atomic Energy Commission
- Other panelists to be announced

November 6 (Optional)

Boat trip — Detection of River Pollution and Sampling Techniques on the Merrimac River

REGISTRATION FORM

Seminar — Field Work in Ecology. September 14, 1971 — January 11, 1972

Attendance Limited to 100 — Please register early.

Registration Fee — \$25.00 payable to Ecology Workshop Fund (Includes transportation, teaching supplies, and refreshments for these sessions).

Mail to: Ralph H. Goodno, Cooperative Extension Service, Essex Agricultural and Technical Institute, Hathorne, Massachusetts 01937

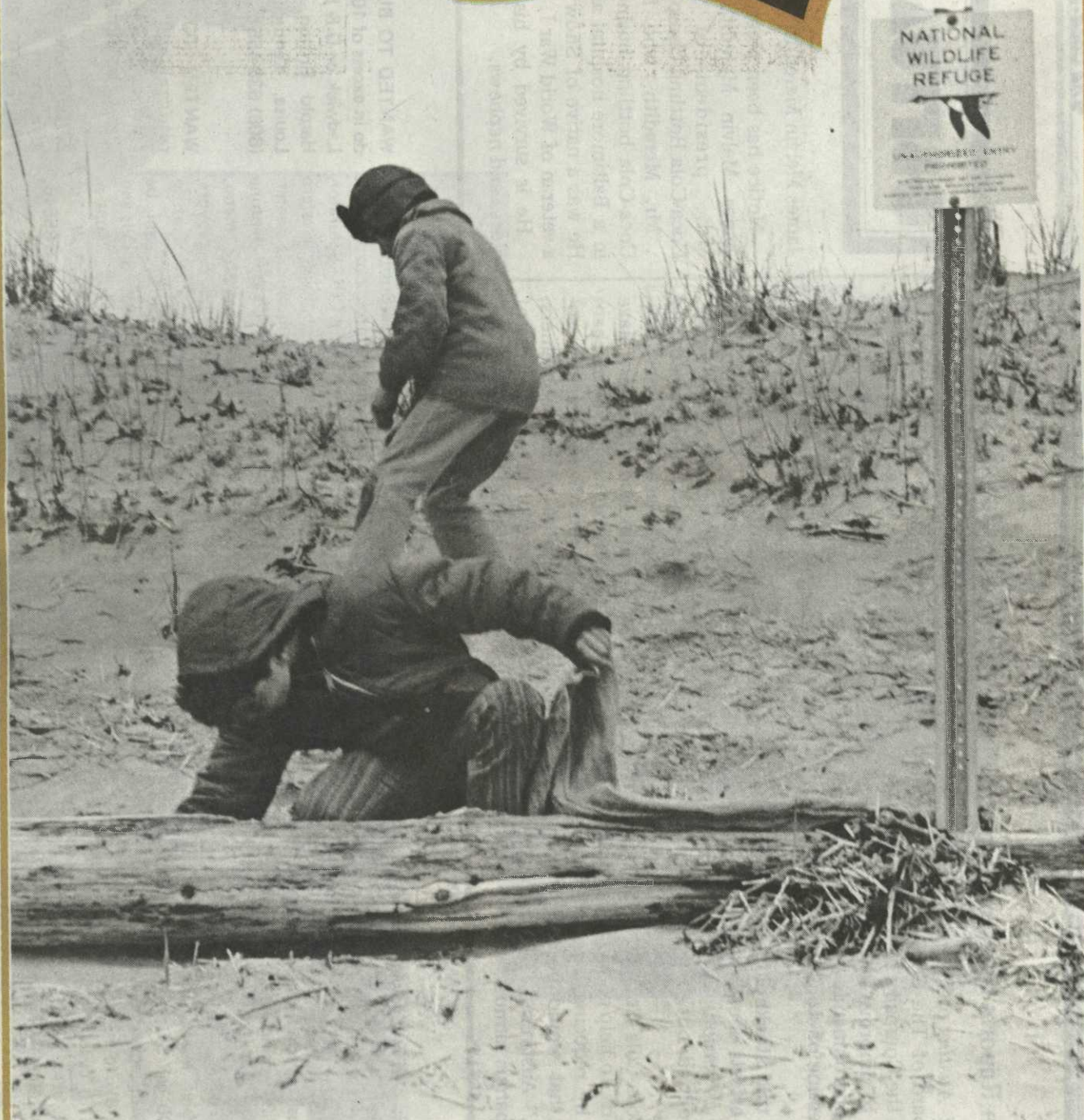
Full Name ..... Phone .....

Address ..... School .....

Zip Code .....



# The Coca-Cola Bottler

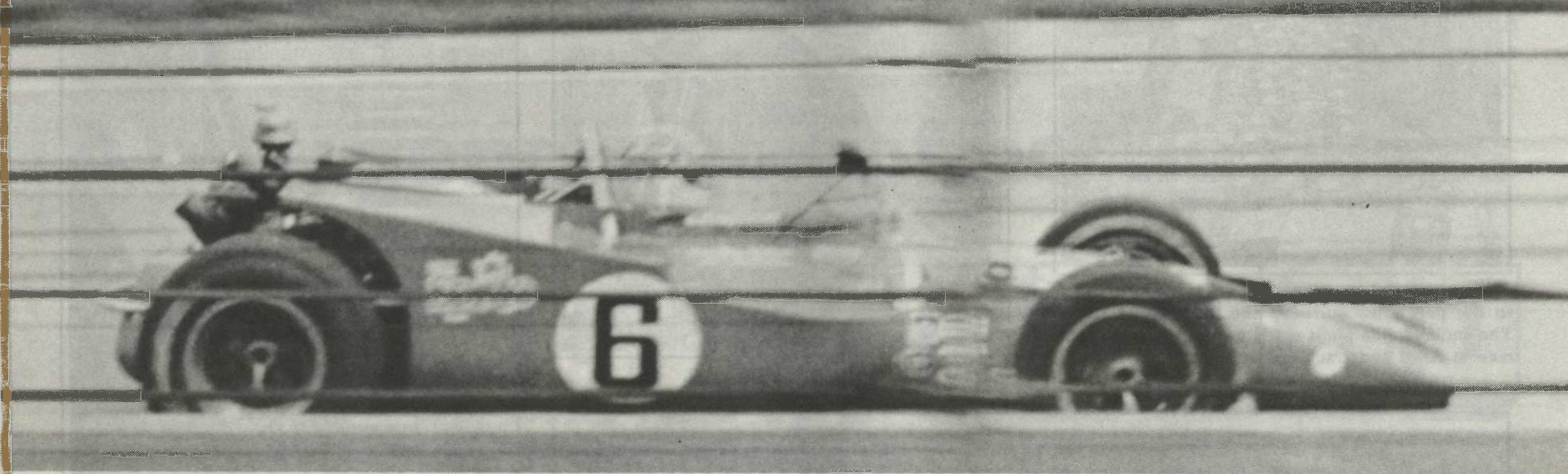


**Plum Island clean up  
page 10**





# INDIANAPOLIS



The Special Advertising Sprite takes a turn around the track during a practice session.

## Servicing the "500"

Three weeks before Memorial Day, things begin to move a little faster around the "500" track at Indianapolis. And things begin to move a lot faster at the Coca-Cola Bottling Company of Indianapolis, right next door to one of the most famous race tracks in the world.

An estimated 300,000 racing fans view the "500" on Memorial Day at Indianapolis, and that's a lot of thirst. It's taken care of from 4005 pre-mix tanks of Coca-Cola and Allied Products. Of these tanks, 4000 are the regular five-gallon size. The other five are 330 gallon tanks mounted on trailers which serve commissaries. Some 200 vendors work out of these commissaries, carrying trays of product into the crowds. High school kids, who do the hard work of carrying and selling, can empty 10 to 18 baskets of product on a good day.

There are 70 refreshment stands that serve the huge track and they use over 100 dispensers for Coca-Cola and Allied Products, according to Dave Cassidy, plant manager, who also manages the concessions at the track.

And sales at the track aren't limited to race day. Almost as many people view the qualifying runs on the two weekends prior to the race as view the actual "500." Even the practice sessions during the early weeks of May are well attended. Approximately

2000 hearty fans viewed the practice runs on a cold rainy May 12, when *The Coca-Cola Bottler* visited the plant to see how they prepare for the event.

In addition to the activities at the track in May, a visitor's center, complete with a refreshment area, remains open during the summer months to serve the thousands of visitors to the famous track.

Setting up the facilities at the track begins in April. The tremendous organizational job is handled by Boz Glidewell, special projects manager for the plant, and Jim Crawley, in charge of the equipment. During the pre-race period, equipment must be checked, repaired, replaced and installed in the areas around the track. While most of the equipment is maintained by personnel of the Indianapolis plant, occasionally shortages are made up by borrowing from a neighboring plant.

The track actually opens in early May for practice runs. Each day the crowds get bigger if the weather is good, and more of the 70 refreshment stands are opened. While 66 of these stands are in permanent buildings, four are special events trailers located in areas where water is unavailable. By the time race day rolls around most of the equipment has been operational at one time or another.

Other places where product is served—either pre-mix or in cans—are well stocked. Most of the hospitality suites contain cool-

ers for cans. And canned product is also provided for organizations such as safety patrols, which direct traffic at the track.

On race day the lines of cars outside the gates for the 5 a.m. opening have been waiting for hours. These are the infield spectators and when the gates open they race—with almost as much ferocity as will later be displayed on the track—for the prime positions around the infield fence.

By 11 a.m. everyone is in place and the race begins. "A crowd of 300,000 people is a real mass of humanity, and it makes it difficult for our repairmen to move around to the various stands to correct equipment failures," says Jim Crawley. "We have three repairmen located at strategic points in the infield with small motorcycles, which allow them to reach the various stands quickly. In the paddock area where the main stands are located, it's almost impossible to get around on the ground, so our repairmen for this area stay up in the penthouse and just come down stairs when they are needed.

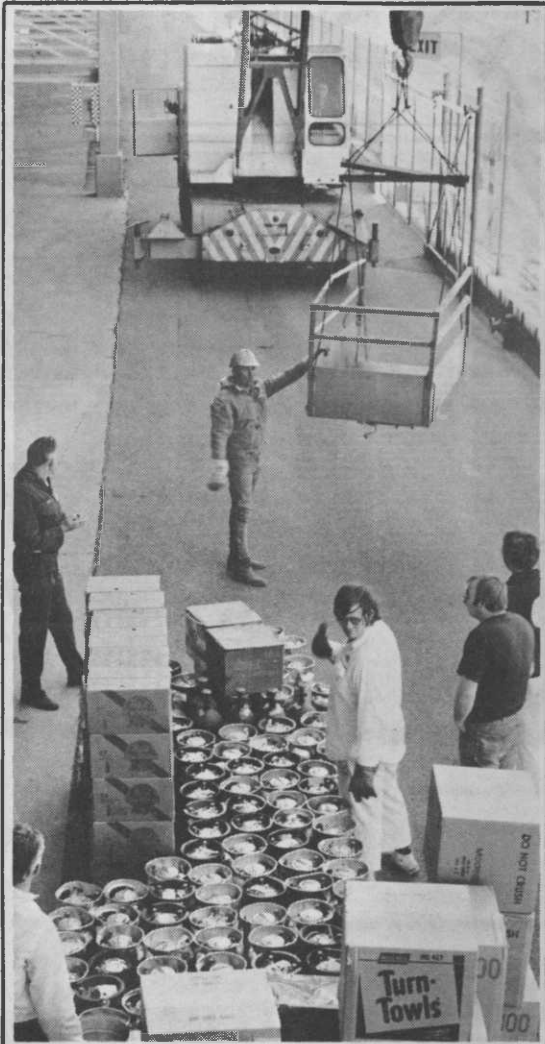
"I maintain a service control center in the paddock area and all calls from the refreshment stands or commissaries come into me. I then relay it to the closest repairman."

Crawley adds, "But for some reason you can never find a repairman during the first five minutes or the last five minutes of the race."

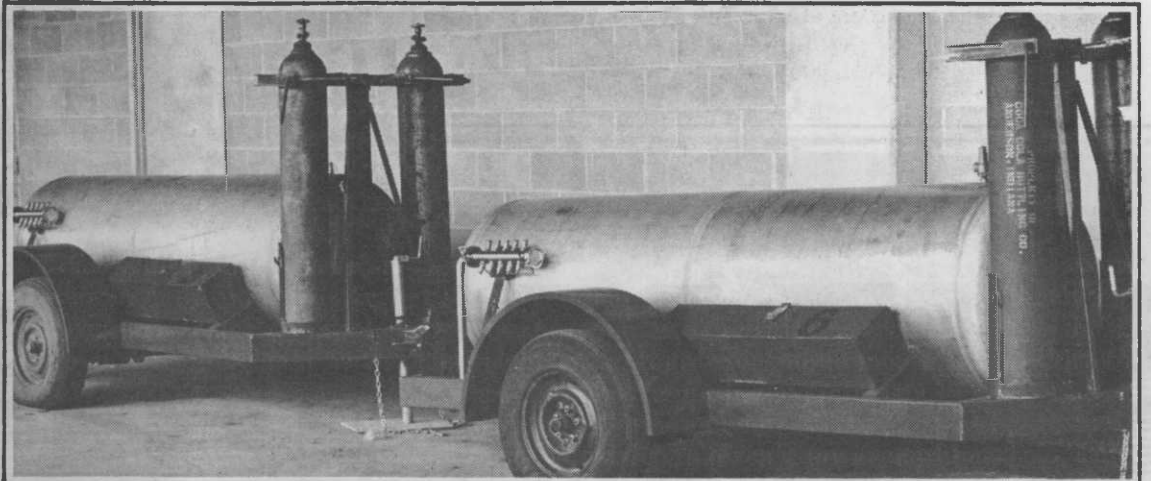
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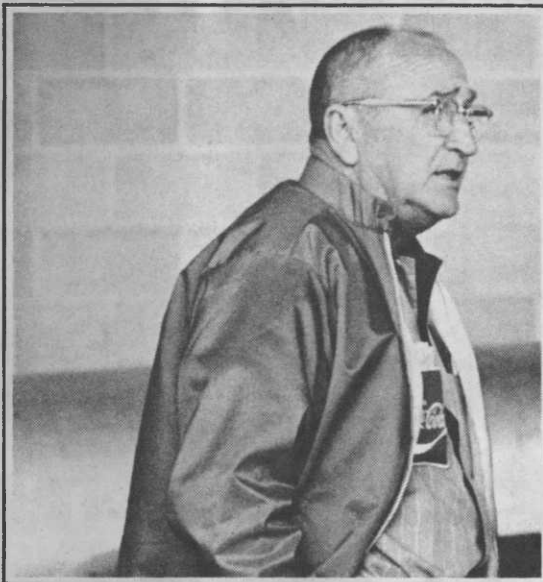
## Servicing the "500"



A crane is used to get equipment and product up to the penthouse suites at the Indy "500" track. The Indianapolis plant starts getting ready for the race in April and track opens for practice May 1.



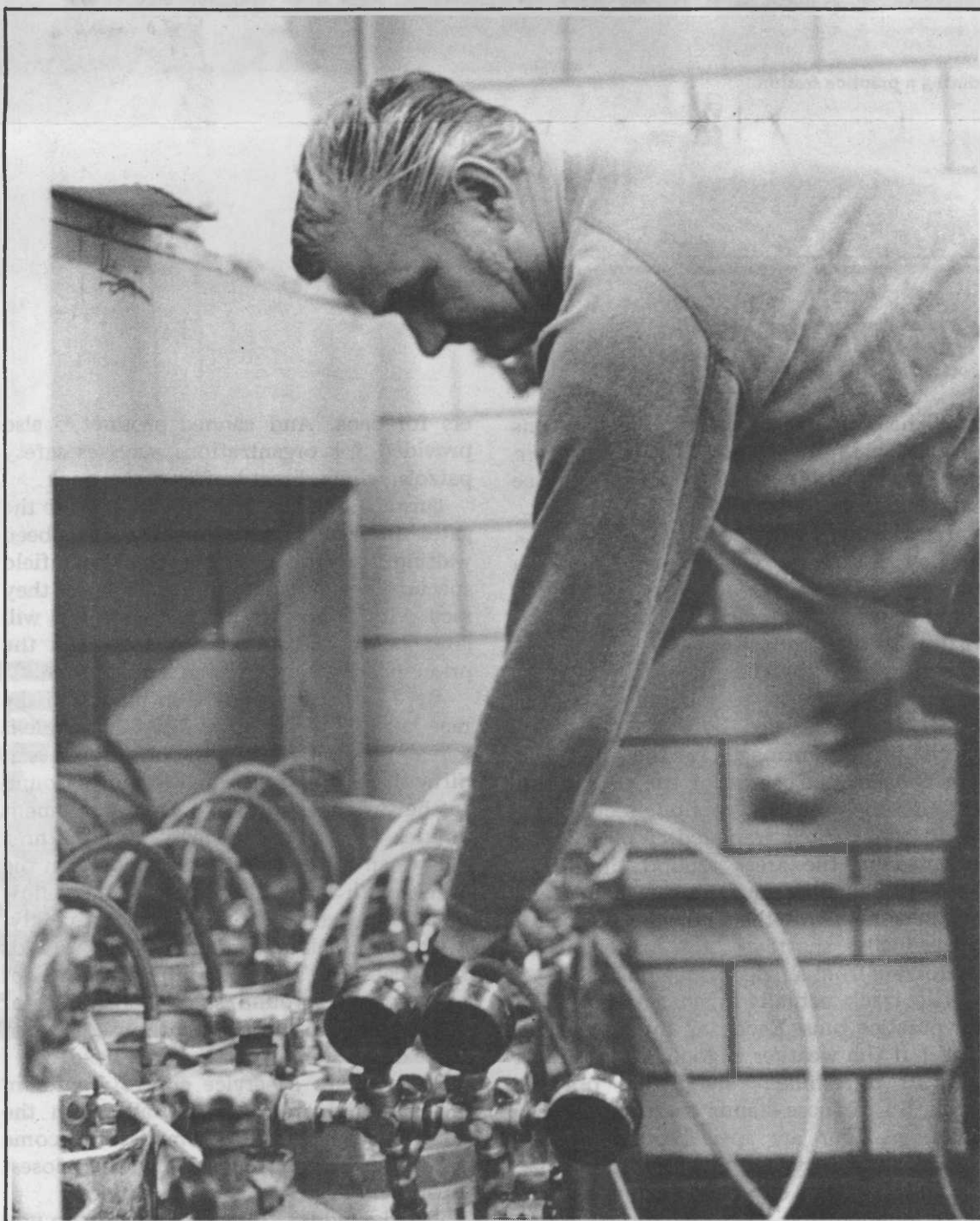
Specially constructed pre-mix tanks, holding over 300 gallons, are used to serve the commissaries which supply the vendors at the track.



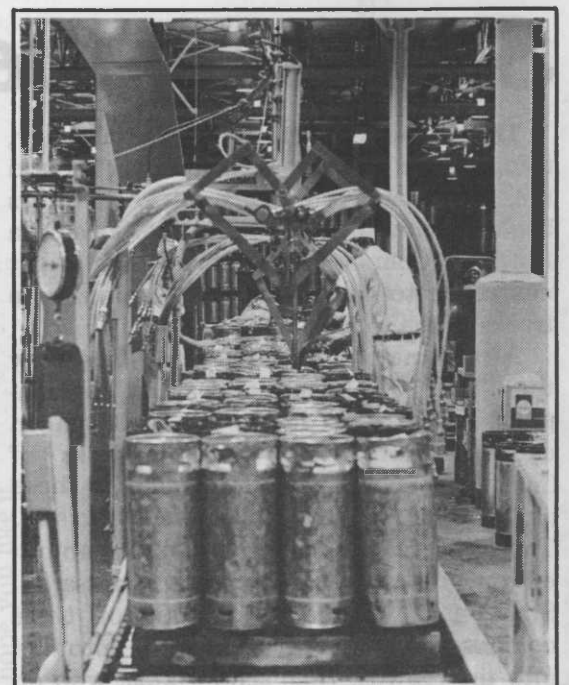
Special projects man Boz Glidewell.



Exchanges of equipment made in the penthouses after the rented crane is gone must be accomplished by muscle power. Repairmen stay up in the penthouse area during the races, descending the stairs to service the refreshment stands in the paddock area.



Jim Crawley, who is responsible for the mass of equipment which provides Coca-Cola to the estimated 300,000 people, connects jumper cables.



Filling pre-mix tanks in the plant. Some 4000 tanks are used during the race.



The high-volume "GCMi 2000" bottle-filling line system was unveiled and demonstrated earlier this month at a press conference in Toledo, Ohio, sponsored by the Glass Container Manufacturers Institute.

The new system, which can fill and cap up to 2,000 bottles per minute, opens the doors for a new generation of filling machinery with its "gang-fill" rather than the single-line rotary filler.

The "GCMi 2000" fills 288 bottles at a time in a configuration 48 bottles wide and 6 bottles deep. Two machines, each 24 bottles wide, are positioned next to each other.

"The new system's volume rate is about three times that of today's bottling lines--and it can operate at a substantially higher efficiency rate and slower lineal speeds than conventional equipment," said W. D. Regnier, associate technical director for GCMi. "In addition, just three men are needed to operate the system, which takes up only about one-third the floor space of conventional equipment that would be required to duplicate the new system's volume rate."

According to Fred Fauth, an engineering consultant to Dostal & Lowey Company which built the machine for GCMi, the system is accurately described as "high-volume" rather than "high-speed."

"Actually, the endless chain that carries bottles through the system moves approximately 15 feet per minute, a much slower rate than conventional equipment," Fauth said. "The gentle handling of the bottles, the relatively slow speed of their movement, and the elimination of glass-to-glass and metal-to-glass contact through the system help preserve the strength of glass containers."

#### How It Operates

The "GCMi 2000" is a straight-line system rather than a rotary filling system of the type commonly used on filling lines. It consists of two identical sections placed side-by-side and separated by a walkway for operating personnel.

An automatically-lubricated conveyor chain carries glass containers through the system. The bottles enter each section of the system from feed tables and are indexed into rows of 24 across. Once the bottles

leave this area there is no further glass-to-glass contact until they emerge at the discharge section. There are no metal-to-glass contacts in the total system, including load and discharge tables.

A flexible diaphragm lifts each bottle off the feeding conveyor and over a scavenger conveyor so that any foreign matter or broken top bottles are removed without a pause in operations. The diaphragm then deposits the bottles into open-end pockets lined with a protective material. These pockets cradle the bottles gently as the chain carries them upward and into an inverted position for rinsing and draining.

#### Rinse, Drain and Travel On

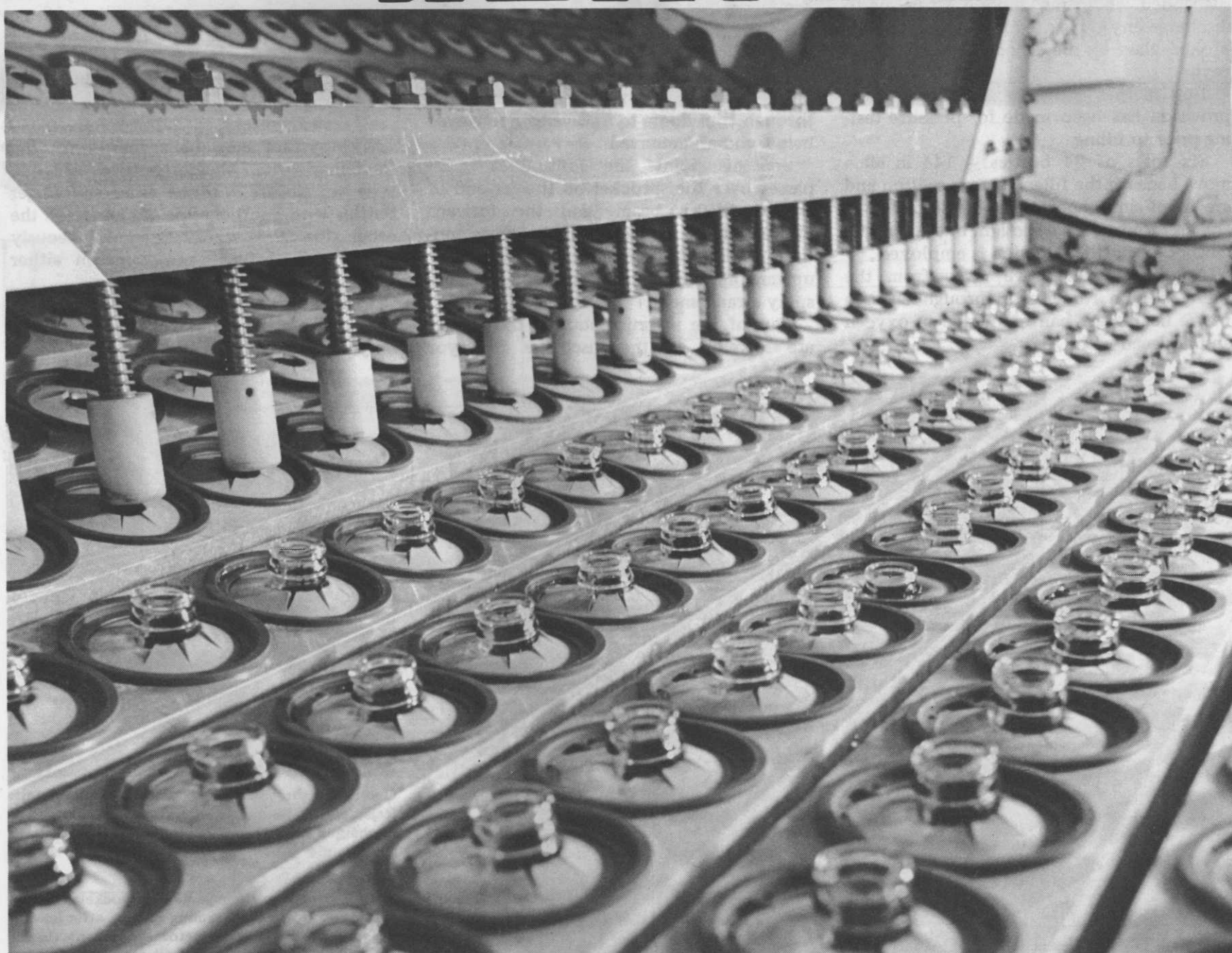
Each bottle is water rinsed twice and is allowed to properly drain before being returned to an upright position prior to entering the filling station.

Up to this point, the bottles have been traveling at a continuous rate, but now they begin moving intermittently, six rows at a time. This intermittent action is provided by means of a cantilever beam in

(continued next page)

## A new generation of bottle fillers

# GCMi 2000

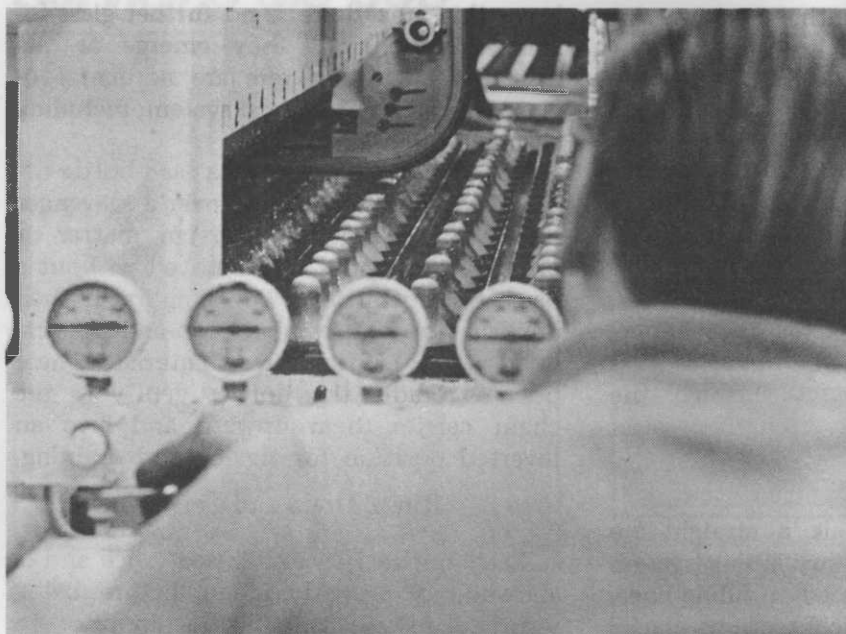


One important advantage of the "GCMi 2000" is the absence of glass-to-glass and metal-to-glass contact once the bottles are within the system. From the feed table, bottles enter the system

when they are lifted by a non-metallic neckgripper diaphragm (shown here) which carries them over scavenger belt. Device on the left then gently pushes bottles down into non-metallic pockets for

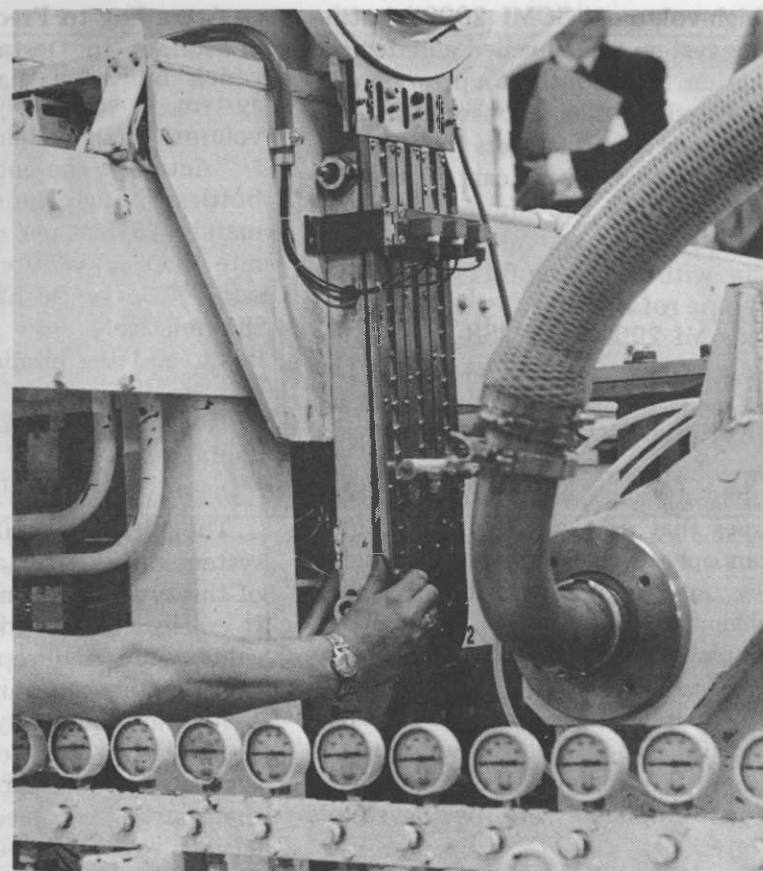
journey to rinsing and draining stations. This scavenger station is the first of three that automatically removes unwanted material without halting equipment.





After rinsing and draining, bottles are filled, 144 at a time, in each of two sections. Fill unit, to right, is 24 bottles wide and 6 bottles deep. Bottles then move to capping unit, left.

Capper is supplied by hopper which transverses unit, upper left. Filling unit is at right, with feed hose attached.



(continued from page 5)

the center section of the system. At each end of the beam are oscillating sprockets that move vertically in slots, thus "taking up" or "releasing" slack, permitting most of the chain to move steadily although the bottles in each six-row segment pause while going through the filling and capping stations.

Prior to the filling, bottles are lifted once again by neck-gripping guides and held suspended while trap doors open below to discharge any unwanted foreign material or broken glass to the second scavenger conveyor.

Bottles then move to a position where provision has been made for pressure testing prior to filling.

Six rows of 24 bottles -- 144 in all -- move beneath the fillers in each section and are filled simultaneously. The filling valves are of conventional design but a unique method of bottle-detection is employed.

As the bottles move away from the filling station, they pass through an area where head-space can be purged of oxygen and replaced with CO<sub>2</sub>.

### Three-Stage Crowning

Because the total forces involved in applying 144 crowns at a single stroke would be quite substantial, the crowner operates three separate times to complete one crowning cycle. The crowns are fed to the six lines of 24 crowning head platforms from two conventional feeders transversing the equipment. Each hopper feeds three rows of platforms, a unique feature in itself.

At the next station, sensing heads determine if crowns have been properly applied. Any uncrowned bottles or bottles that may have failed in the filler or crowner, fall through trap doors to a scavenger conveyor below and are removed.

At this point, the continuous chain passes over the sprocket on the far end of the cantilever beam, and the forward motion of the bottles again becomes continuous. The bottles then move vertically upward and through a festooned warming spray arrangement.

Out of the warming station, the bottles are lowered to the discharge conveyor

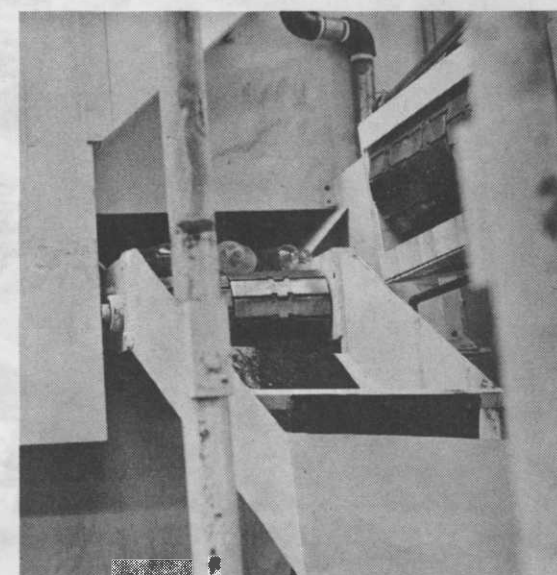
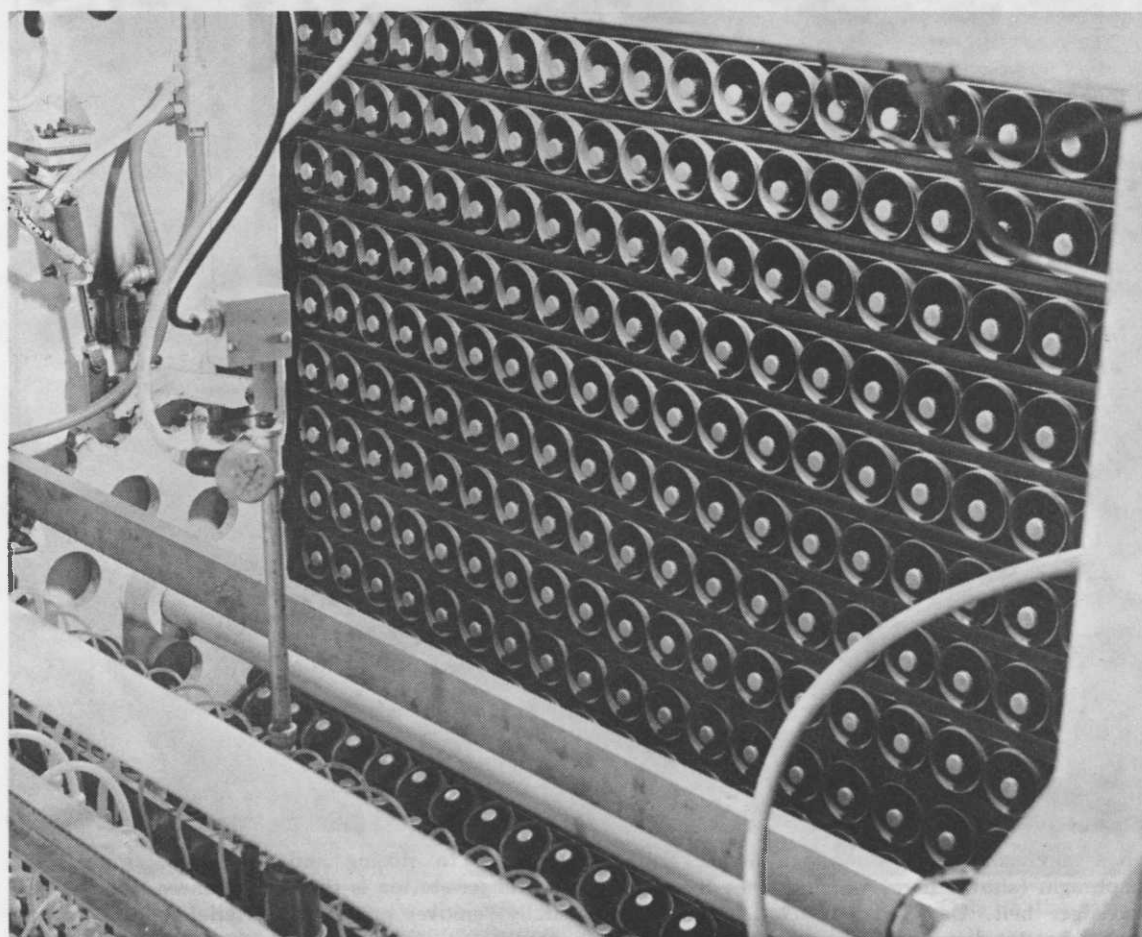
where the pockets are lifted. The glass containers have completed their journey through the "GCM 2000" in about ten minutes.

The width of the "GCM 2000" is approximately 27 feet. It is about 72 feet long, including the unscrambling load table and discharge table and conveyor. The system's height is 12 feet.

The prototype in operation fills bottles in commonly used sizes from 6½ to 16-oz. in capacity, but equipment may be ordered to handle bottles from 16-oz. to 32-oz. capacity. The system has the potential for being adapted to handle all types of currently used closures, including screw-on.

The system may be ordered with the flexibility to fill smaller bottles with one type of closure on one side, and larger bottles with another type of closure on the other side. Bottles can be simultaneously filled with different products on either side.

Changeover for the closure systems takes several hours, but product changeover takes only about 20 minutes.



One of the three scavenger outlets located on unit. Rejected bottles and other unwanted materials are discharged through bottom of pockets and out of side of unit.

Bottles remain in their protective pockets as they climb upward to the warming station, after leaving capping station and detector equipment (lower left). Detector determines if all crowns have been applied, discharging any uncrowned bottles. From the warming station, bottles are discharged from the high volume system to conventional conveyors for packaging.



#### Available Now

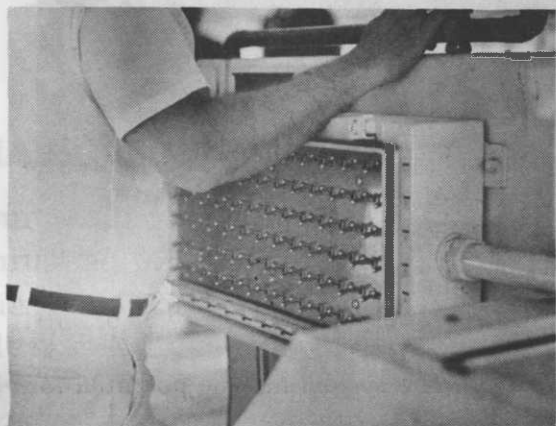
Dostal & Lowey Company is accepting orders for the system now, according to its president, Frank Howell.

"The cost of the system will be approximately \$750,000, depending on customer needs and specifications," Howell said. "It will take about nine months from the order to delivery date.

"We will also accept orders and build a system with one section instead of two--with a 1,000 bottle per minute capacity--for about \$400,000."

Progress has also been made in the development of ancillary equipment--such as empty bottle inspectors and fill height detectors--which will mesh with the high volume output of the system.

Dr. J. A. Brent, vice president, Technical Division, Coca-Cola USA, stated that several departments of the Company have consulted with GCMi on this project as part of a continuing effort to help equipment suppliers more efficiently meet the production needs of bottlers. The Engineering Department, along with other departments, will maintain contact with GCMi during the initial operations of this prototype machine in order to make assessments of its future potential.



Control panel for filling spouts. Each of the 288 spouts is separately controlled so that if one clogs, the operator can merely stop running bottles through the pockets serving that spout.



Operator stands at one of the control panels on walkway between the two sections. Just three men are needed to operate the system, according to GCMi.

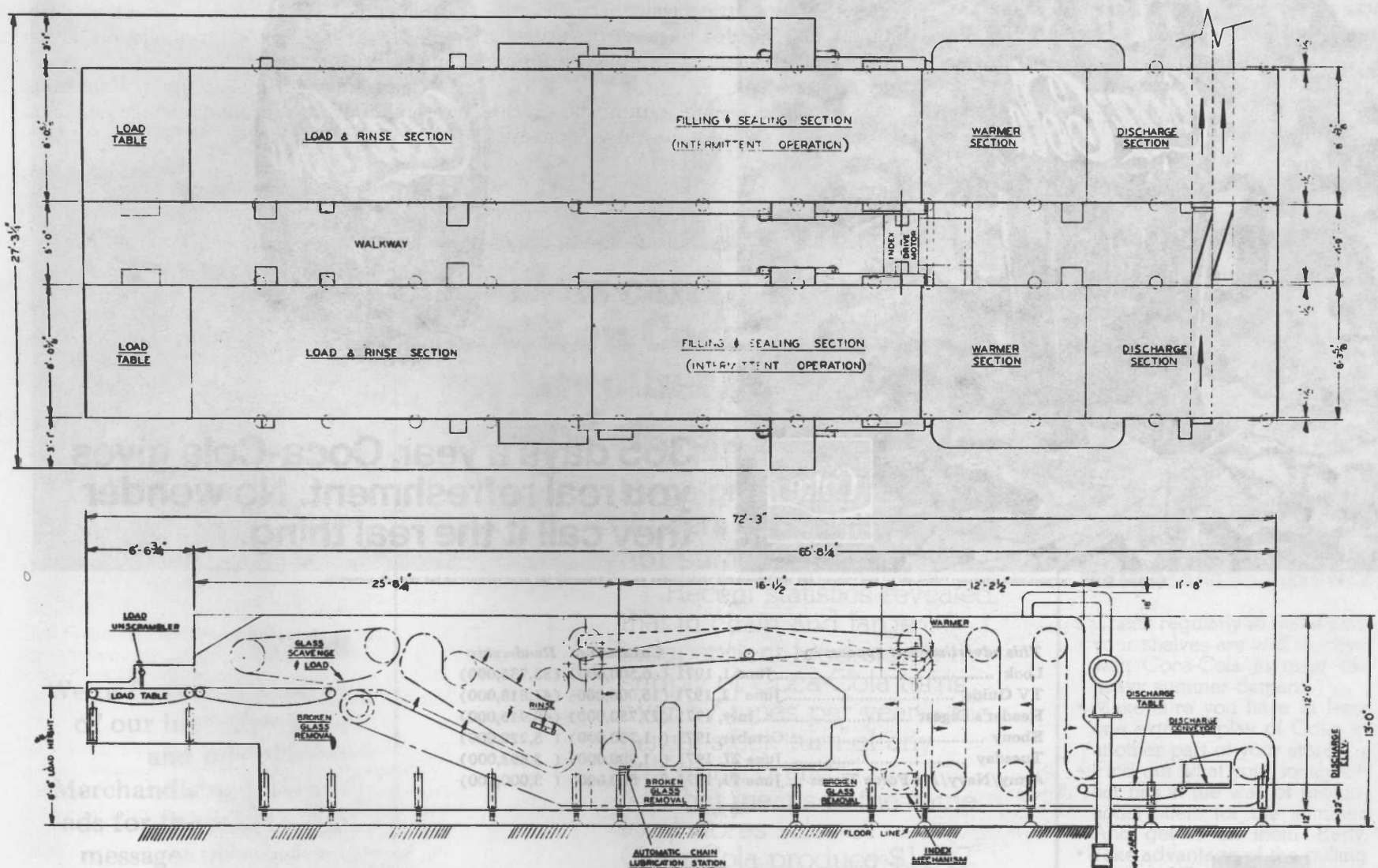
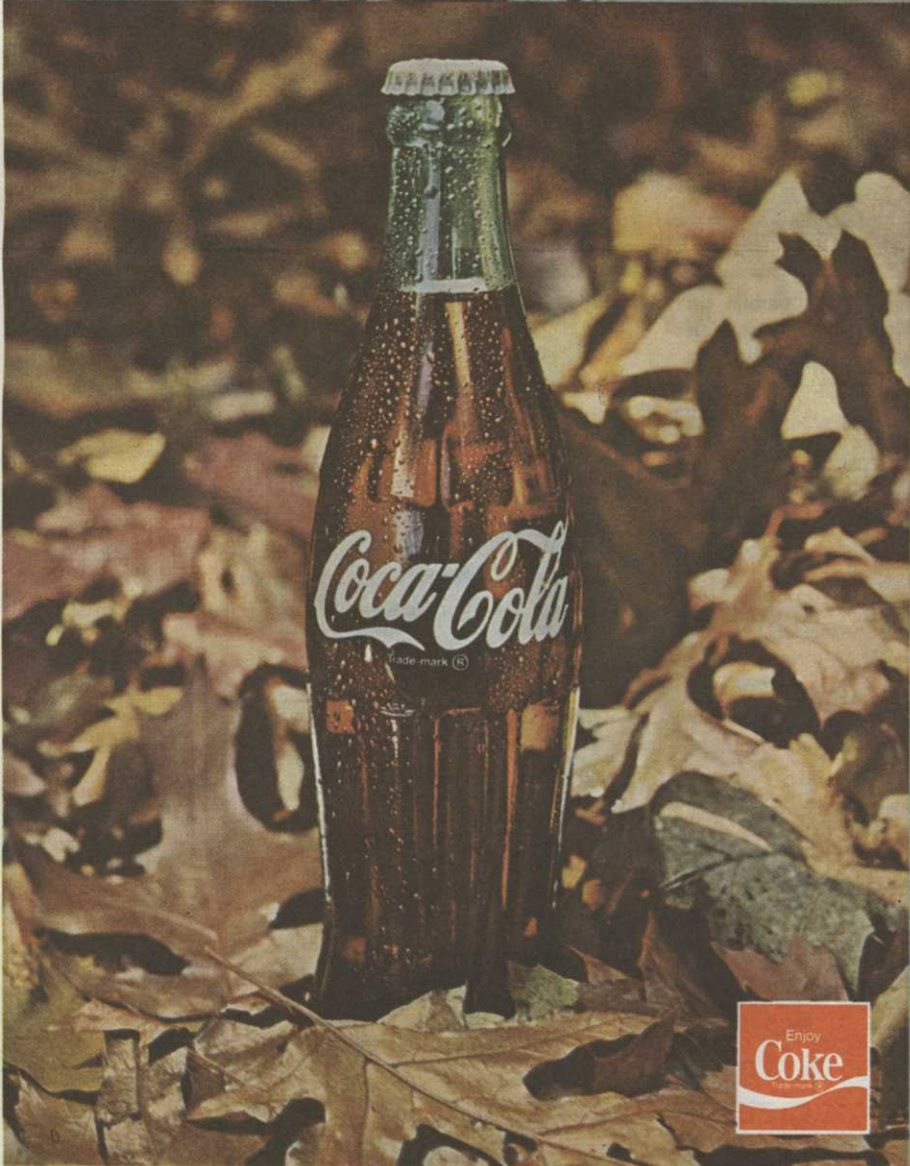


Diagram shows top and side views of one of the two identical parallel sections composing new "GCMi 2000" system.





365 days a year, Coca-Cola gives you real refreshment. No wonder they call it the real thing.

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This advertisement appears in:		Circulation	Readership
Look	June 1, 1971	( 6,500,000 )	( 33,735,000 )
TV Guide	June 12, 1971	( 15,000,000 )	( 41,818,000 )
Reader's Digest	July, 1971	( 17,750,000 )	( 49,916,000 )
Ebony	October, 1971	( 1,250,000 )	( 5,229,000 )
Tuesday	June 27, 1971	( 1,900,000 )	( 3,893,000 )
Army/Navy/Air Force Times	June 16, 1971	( 500,000 )	( 3,000,000 )



**It's the real thing. Coke.**

TRADE-MARK ©

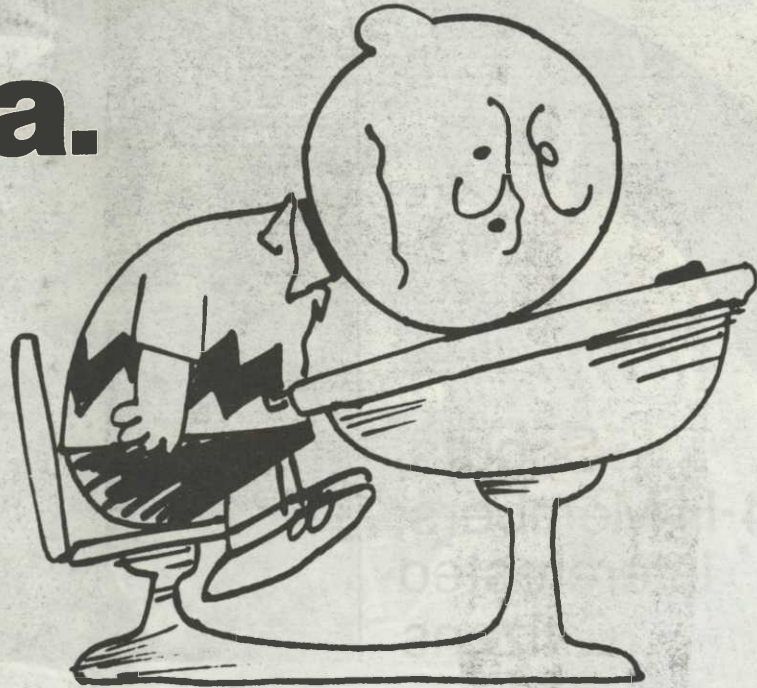


# Popular Charlie Brown Show Launches Summer Advertising for Coca-Cola.

TRADE-MARK®

## TELEVISION

"You're in Love, Charlie Brown." Head-over-desk in love . . . that's good ol' Charlie Brown, who ponders how to convey his feelings to a certain little red-headed girl in his class when "You're in Love, Charlie Brown" is rebroadcast, Monday, June 7, on CBS-TV, in color. Naturally the big event is co-sponsored by bottlers of Coca-Cola.



## MAIN THRUST

Our beautiful main thrust ad for June makes the point graphically clear that Coca-Cola gives you real refreshment 365 days a year.

# MERCHANDISING MONITOR

Coca-Cola and Coke are registered trade marks which identify the same product of The Coca-Cola Company



**Dealers can make more profit on Coca-Cola than on any other single brand in food stores!**

**Huge profit seen for dealers especially during hot summer months.**

Recent statistics revealed that in chain and large independent food stores the supply of Coca-Cola turns over 57 times per year — the fastest stock turn of any soft drink brand.

That means in the same food stores sales of Coca-Cola produce \$11.47

in dealer profit per year for each dollar invested in stocks.

And if you think these statistics have something to do with dealers making more profit on Coca-Cola than on any other single brand in food stores, you're absolutely right. Think of it. More dealer *profit* than any other single food brand in food stores.

So take advantage of the facts. Stock up on plenty of Coca-Cola for the hot selling summer months. You can't go wrong with the world's most popular soft drink.

And with that kind of market, you've got a lot of Coca-Cola to sell...and a lot of profit in store for you.

## TRADE

We're featuring another of our highly popular and informative Merchandising Monitor ads for the trade. Our message: dealers can make more profit on Coca-Cola than any other single brand in food stores. And we've got the statistics to prove it.

## MERCHANDISING TIPS

- Check regularly to make sure your shelves are well stocked with Coca-Cola to meet the heavy summer demand.
- Make sure you have at least one extra display of Coke in another part of your store.
- Find out what your local bottler has in the way of promotional offers for the summer. And get in on them. Early.
- Take advantage of the pulling power of Coke for related item displays.

**CONTACT YOUR COCA-COLA BOTTLER FOR DETAILS. IT'S THE REAL THING. COKE.**



Scouts,  
4-H Members,  
Interested  
Citizens



## cleaning up Plum Island

A cold, brisk wind blowing in from the northwest made the 40-degree temperature at dawn seem even colder than it was. . .not the best weather to start off the third annual Plum Island Clean-up campaign.

During the early hours of the operation, coffee and hot chocolate were the order of the day, but as the temperature rose and skies cleared a different type of refreshment was needed. As in the past two years, *Jack Leary* of the Newburyport Coca-Cola Bottling Co. donated Coca-Cola for the thirsty workers. By the end of the day not a single filled bottle remained. And no empties remained on the beach.

Plum Island is located 35 miles north of Boston and 6 miles east of Newburyport, Mass. The Parker River Wildlife Refuge covers the southern two-thirds of the island with the remainder housing a wintertime population of 500. Summertime swells the populace to 3,000. The Wildlife Refuge is visited by over 275,000 people annually for hiking, swimming, picnicking, birdwatching, and fishing on its 4,650 acres.

The island was discovered by Champlain in 1601 and mapped by Captain John Smith in 1616. To Ed Moses, manager of the Wildlife Refuge, and many others, it seems that man-made litter has been accumulating ever since. Hence the need for the annual clean-up.





The object of the operation was to take boy scout volunteers, their leaders, residents of the island, members of the Plum Island Surfcasters and Lightliners, Inc., and the Massachusetts Beach Buggy Association and walk the 10-mile-long island from one end to the other, picking up man-made litter and debris that had accumulated from the past summer and winter. This included debris that the tides had washed ashore during the area's well known Nor'easters.

Ed Moses and Arnold Spofford, of the Massachusetts Beach Buggy Association, arrived in the main parking lot of the refuge early Sunday morning and began setting up the command tent and bulletin-board that held the master map of Plum Island. The map divided the island into grids, each with identifying letters and numbers. Smaller copies of the map had been mailed out in advance to the scouts, and each troop had been assigned sectors to work.

Stockpiles of donated burlap sacks, plastic bags and large cardboard boxes were on hand for the arrival of the first workers. A total of over 375 people including 283 scouts and their leaders, were involved in the project. Some family groups came to help; 4-H club members showed up and some 'just plain interested citizens' who use the area in the summer came to help. All were assigned areas and transported to them in the 37 vehicles that took part during the day. The Massachusetts Department of Natural Resources supplied large trucks that served as collection points and hauled the litter to town dumps.

PITA (Plum Island Taxpayers & Assoc., Inc.) made coffee and hot cocoa and distributed them along with cookies. Bob Smith of the Plum Island Surfcasters distributed all sorts of refreshments from his beach buggy including hundreds of bottles of Coke and 500 donuts donated by the club.

A medical team headed by Dr. Joseph D. Karras of Brookline, a member of the Lightliners, was on hand to render aid. Fortunately the day's casualties amounted to only one cut finger and a nosebleed.

The clean-up campaign lasted from 9 a.m. until 5 p.m. and when the tired but satisfied volunteers made their way home, over 20 truck-loads of debris had made the trip to the dumps. Everything, including the inevitable kitchen sink, had been gathered up. The beach was clean again. ■



Jim Curley, Newburyport route salesman, who works a bottle route on Plum Island, talks with Wildlife Refuge manager Ed Moses.





**HARRY MILLER**, manager of the plant at Elberton, Ga., displays the per capita award presented to his plant.



**F. M. BELLINGRATH**, left, president and general manager of the Coca-Cola Bottling Company of Southeast Arkansas, is presented a per capita award for the company's Pine Bluff plant by **Art Peschel**, district manager, Southwest Area, Coca-Cola USA.



**BILLY BAUGHMAN**, right, manager of the plant at Abbeville, S.C., is presented a per capita award by **L. B. (Buz) Etheredge**, district manager, Coca-Cola USA.



**WINNER OF THE CREATIVITY AWARD** in the Coca-Cola USA competition for printed football programs in the Miami area was Jackson Senior High School. Here, **Fleetwood Price**, left, sales and marketing representative of the Coca-Cola Bottling Company of Miami, presents the award to **Bob Wilcosky**, activities director and editor of the school's football program. Also on hand for the presentation were **Steve Brown**, right, sales manager of the Miami plant, and **Arthur Ashe**, tennis champion and special consultant for Coca-Cola USA. The award was presented during an assembly of students, who heard Ashe report on his tour of six African countries.



**FRANK PRYOR**, left, Pensacola (Fla.) plant manager and **Jerry Couch** of the Lewis Bear Co., Pensacola, Fla., receive awards for their companies' efforts at keeping that city trash-free. **Mrs. Ouida Baggett Regan**, chairwoman of the Chamber of Commerce's environmental study committee, made the award to the Pensacola plant for their advertisement encouraging the purchase of returnable bottles.



## Austin Reports On Recycling and Plastic Bottle at Stockholders Meeting

J. Paul Austin, president and chairman of the board of The Coca-Cola Company, reiterated the Company's support of efforts designed to improve the quality of life through environmental protection at the annual meeting of stockholders in Wilmington, Del.

Austin told stockholders that successful recycling efforts sponsored by bottlers are underway in various parts of the nation, and he pointed out that these are being expanded.

"The Coca-Cola Company fully supports these efforts to help combat environmental pollution by reducing the amount of glass and cans that would become solid waste and litter," Austin said. He also noted that the Company's annual report, mailed to

stockholders, is printed on 100 per cent reclaimed waste paper.

Commenting on current testing and evaluation of plastic bottles for Coca-Cola, Austin said that the initial test in New Bedford, Mass., was expanded in December to Providence, R.I. He said the latest test is another step in a carefully planned research and development activity to evaluate the technical, manufacturing, economic, environmental, logistical, public health and marketing aspects of plastic containers.

"To date," Austin said, "our tests have shown that there are no significant mechanical, chemical or corrosive problems associated with the disposal of these containers, either by themselves or as components of municipal waste systems."

## OBITUARIES

James Melvin Meredith

Notice has been received of the death of James Melvin Meredith of Westminster, Md., president of the Westminster Coca-Cola Bottling Company, Inc.

Mr. Meredith, who had been in the Coca-Cola bottling business 48 years, died in a Baltimore hospital after a long illness. He was a native of Snowville, Va., and was a veteran of World War I.

He is survived by his wife and several nieces and nephews.

FOR SALE: 1955 Ladwig Bottle Washer Quart - 24 wide, serial No. 30155321, Model 301, speed approximately 60 to 300 BPM; 1964 Ladwig Case Packer, serial No. 3P1R64101, 3 Packing Heads, handles up to 28 oz. bottles; 1960 Miller Hydro Case Packer, handles up to 16 oz. (returnable) Model 162K; 1964 Mueller 1,000 gal. S.S. holding tank, horizontal with agitator; Liquid 40 Spout Filler, 6½ to 16 oz., model F., serial No. 2813, Year 1941; Liquid 15 Head Mixer, serial No. 700, Year 1941; Two - 200 gallon stainless steel storage tanks; Mojonnier Carbo-Cooler, Model 620 No. 2345, York 4 x 4 Compressor Model D-8, No. 277302; R.C.A. Atkrom Uncaser, serial No. U6017, Year 1957; Mojonnier Carbo Cooler, Model 102, serial No. 2157, (1948), York Compressor 5 x 5, Model D-8, Serial No. 281920 (1949); Liquid 15 Head Mixer, Serial No. 776; Miller Hydro Caser, Model P.B. 404; Kwik-Kleen Water Filter No. 40492, 400 G.P.H.; One Helco BBL Syrup Connection 4 in line; One Helco BBL Trucks; One Helco BBL Hoist; Lightnin Mixer, Model Dvl; D & L Bottle Washer, Serial No. SF120927M 6-Wide, Year 1962; CEM Pre-Mix Filler (4 Head), D.L. 4-341, Year 1956; Liquid Filler No. 228-48264, 12 Spout, Red Diamond, purchased used in 1965; Helmco B.B.L. Rack, Model B.R. No. 11-1949; 12 Spout Liquid Red Diamond Filler No. 228-5202, Year 1952; Miller Inspection Light; Potter Rayfield Water Cooler No. 5487, Model D4, Year 1952; CEM 250 Gal. Saturator No. 218-25, Type B; Red Diamond (12 Spout) S/N 228-48-169; Cherry Burrell Pre-Mix Can Washer S/NG60-732; Kol-Flo Redi-Mix Pre-Mix Filler (4-Head) S/N 7041-59; Lightning Mixer, S/N 543849; Miller-Hydro Case Packer, Year 1955; Synchrometer, Model Sy163; Standard Knapp Case Packer, 1965. Please contact: Charles R. Racey or George Schwab, Associated Coca-Cola Bottling Co., Inc., P. O. Box 1380, Syracuse, New York 13201. Phone (315) 457-9106.

4-71

FOR SALE: 10,000 plus four pocket carton shells - yellow - above average shape - 45 cents FOB Minton. Please contact: Joe Hunter, 412 Pine Street, Minden, Louisiana 71055. Phone (318) 377-6846.

4-71



FOR SALE: Five Route Trucks equipped with overhead door pallet bodies: No. 5 1963 International Co-1700, V345 engine, 5 speed trans., 17,000 rear axle, 900 x 20 tires; No. 120 1962 International 1700, V345 engine, 5 speed trans., 16,000 rear axle, 900 x 20 tires; No. 122 1962 Ford C700, V8-332 engine, 5 speed trans., 18,500 rear axle, 900 x 20 tires; No. 123 1962 Ford C700, V8-332 engine, 5 speed trans., 18,500 rear axle, 900 x 20 tires; No. 132 1963 International 1700, V304 engine, 4 speed trans., 15,000 rear axle, 825 x 20 tires. All in good serviceable condition. Please contact: Mr. Granville Lowe, Terre Haute Coca-Cola Bottling Co., Inc., P. O. Box 209, Terre Haute, Indiana 47808. Phone: (812) 234-6651.

4-71

FOR SALE: One Miller Hudro Case Packer, Model M.T., Type S.D.U. Reverse Speed, Serial No. M.T. 230. Bottle sets to pack 6½, 10, 12 & 16 oz. Machine installed new in 1966, excellent condition. Will be available in early May. Please contact: John T. Bell, The Coca-Cola Bottling Works, Inc., Havre De Grace, Maryland 21078.

4-71

FOR SALE: 2000 lb. High Pressure Carbon Dioxide Storage System, \$1,000.00 - Liquid Carbonic Water cooling system, \$600.00. Please contact: George S. Hazard, Coca-Cola Bottling Works, Inc., 125 Bois D' Arc Avenue, Columbus, Mississippi 39701. Phone 328-1630.

4-71

FOR SALE: One D & L 6-wide bottle washer, completely rebuilt in a machine shop - new bearings, shafts, etc. Capacity 40-60 bottles per minute. Price \$2,500.00. One rebuilt CEM Saturator. Price \$700.00. Please contact: D. M. Truant, Red Deer Bottling Co. Ltd., 4601 - 50 Avenue, Red Deer, Alberta, Canada. Phone: (403) 346-2585.

4-71

FOR SALE: Complete Bottling Line - CEM 28-B Filler (6½ to 32 oz.), D & L washer (6½ to 32 oz.), CEM Saturator, CEM water cooler, complete Western water treating system, Evans heater, CEM full product mixer, Neptune sugar meter, Neptune water meter, accumulating table, conveyors, miscellaneous parts. Presently operating on daily basis - will be available in June. Complete details and price on request to: 3-G Counties Coca-Cola Bottling Co., 213 W. 7th Street, Safford, Arizona 85546; Attention: L. E. Stauter.

4-71

FOR SALE: New 10-oz. Fresca bottles, \$4.50 per gross. Please contact: Rudolph C. Kull, Mattoon Coca-Cola Bottling Co., Inc., 21st Street and Prairie Avenue, Mattoon, Illinois 61938.

4-71

FOR SALE: 10,000 cases twelve-ounce returnable bottles for Coca-Cola, used, good condition. No shells. Will sell for best offer. Contact: Don Kenney, Coca-Cola Bottling Company of Chicago, 7400 North Oak Park Avenue, Chicago, Illinois 60648. Phone: (312) 647-0200

5-71

FOR SALE: 10,000 cases of 6½ oz. Coca-Cola, 5,000 cases of 7 oz. Sprite. All items in carton shells. Price \$1.50 per case F.O.B. Detroit. Please contact: Edward J. Martin, Detroit Coca-Cola Bottling Company, 5981 West Warren Avenue, Detroit, Michigan 48210. Phone: (313) 898-1900.

5-71

FOR SALE: 2 Standard-Knapp packers, Model 870 S.N. 488 and 670 (6-lane). Grids to handle 6½ oz. through 28 oz. bottles. 2 S-K Case Feeds - Type 846 R.M. Please contact: Bill Fleming, Coca-Cola Bottling Company of San Diego, Highway 94 at 47th Street, San Diego, California 92102.

5-71

FOR SALE: Seven route trucks with deck bodies, all 2-ton with drop frame and Hesse 5-wide - 4-deck bodies with doors: 1967 International 12 long; 1965 International 12 long; 1966 GMC 11 long; 1966 Ford 11 long; 1963 GMC 12 long; 1963 Ford 11 long; 1962 GMC 14 long. Contact: Jack J. Horn, Horn Beverage Co., Inc., 219 South Johnson Street, Macomb, Illinois 61455. Phone: (309) 833-4131

5-71

WANTED TO BUY: Bottle washer to do in excess of 100 BPM. Would prefer Ladwick or D & L. Please contact: Mr. Harold Britton, P. O. Box 500A, Louisa, Kentucky 41230 or phone (606) 638-4554.

4-71

WANTED TO BUY: Used 10 oz. returnable TAB bottles. Please contact: Lee Wallace, Durham Coca-Cola Bottling Company, P. O. Box 2627, Durham, North Carolina 27705. Phone: (919) 383-1531

5-71

WANTED TO BUY: 5 or 10 gallon Pre-mix tanks. Please contact: Michael Messinger, Coca-Cola Bottling Company, 837 East St. Patrick Street, Rapid City, South Dakota 57701. Phone: (605) 342-8222

5-71

FOR SALE: 30 New Vendo Vari-Price, 10, 15, 20, 25 cent with nickel dime payout changers, model 91F 9303D 3703, \$40 each. Please contact E. I. Fleming, Jr., Coca-Cola Bottling Company, Inc., P. O. Drawer 592, Rocky Mount, N.C. 27801.

5-71

FOR SALE: 92 - 50 drink Pre-mix tanks. Please contact: Michael Messinger, Coca-Cola Bottling Company of Black Hills, 837 East St. Patrick Street, Rapid City, South Dakota 57701. Phone: (605) 342-8222

FOR SALE: One Meyer HD Uncaser SS 810 1966, Fair condition, \$2000. One Red Circle Premix tank washer, 1957, 144 CPH, Fair condition, \$500. May be seen at Cleveland Coca-Cola Bottling Company, 3705 Carnegie Avenue, Cleveland, Ohio 44115. Please contact: Gwin Batley. Phone: (216) 391-7665.

3-71

FOR SALE: 5 - Complete ice-maker systems for Super Mark 11A Ice-O-Vend. Make offer. Please contact: C. A. Blanken, Coca-Cola Bottling Company, P. O. Box 556, Santa Maria, California 93454. Phone: (805) 925-2629.

3-71

FOR SALE: 40,000+ open pocket carton shells, yellow with Coca-Cola trademark. Above average condition. Shells made to accommodate 6½ oz. or 10 oz. bottles in either 6 or 8-pack cartons. Price: 40 cents F.O.B. Pittston, Pennsylvania. Contact: Asa Day Jr., 300 Oak Street, Pittston, Pa. 18640. Phone: (717) 655-2874

5-71



# Editorial

## Where Are You?

We know you're out there, but for some reason we can't hear you. But we'd like to. We'd like to know just what you and your people are up to. What activities you are involved in. What new techniques you've discovered (or what old techniques you've rediscovered or refined). What works or what doesn't work. Things other bottlers would find helpful. Just anything you'd like to tell us.

The reason for our interest is simply to provide you with the best possible publication. It's yours, so we'd like for you to participate. Our purpose is to provide helpful information to assist you and other bottlers in developing better ways to produce, distribute and promote Coca-Cola and the Allied Products.

We're not asking you to do it all. We'll be out nosing around, asking you questions and trying to dig up stories that cover all of the many areas in which you tell us you are interested. But we also need help from you.

Don't be bashful. Send us photos, information, reprints from local newspapers, press releases, anything. Obviously, we can't use it all, but we'll certainly try. The point is, we're interested in making The Coca-Cola Bottler truly your magazine.

This is issue number ten of the publication in its new format and twice-a-month frequency. We hope you like it.

The Editors

Coca-Cola and Coke are registered trade-marks which identify only the product of The Coca-Cola Company. Sprite, Fanta, TAB, Fresca, SIMBA and SANTI'BA are also registered trade-marks of The Coca-Cola Company.



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